

**PROCEEDINGS**  
**OF THE**  
**CALIFORNIA ACADEMY OF SCIENCES**  
**FOURTH SERIES**

**VOL. XVI, Nos. 23 AND 24, pp. 689-758**

**MAY 22, 1928**

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**XXIII**

**Report of the President of the Academy  
for the Year 1927**

**BY**  
**C. E. GRUNSKY**  
*President of the Academy*

**XXIV**

**Report of the Director of the Museum  
for the Year 1927**

**BY**  
**BARTON WARREN EVERMANN**  
*Director of the Museum*

**SAN FRANCISCO**  
**PUBLISHED BY THE ACADEMY**  
**1928**



# TRUSTEES, OFFICERS, COUNCIL, AND MUSEUM STAFF OF THE CALIFORNIA ACADEMY OF SCIENCES

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CALIFORNIA ACADEMY OF SCIENCES

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MAY 22, 1928

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**XXIII**  
**REPORT OF THE PRESIDENT OF THE ACADEMY**  
**FOR THE YEAR 1927**

BY  
C. E. GRUNSKY  
*President of the Academy*

During the year 1927 the Academy has done further useful work, as will appear from the following brief summary of activities, and from the reports of the Director of the Museum and of the Curators of the Academy's various departments. The only disappointment lies in the fact that another year has rolled by without means being in sight for additions to the Academy building in Golden Gate Park. More space is urgently needed. In the fields for scientific investigation and extension of the collections of material to be studied in the Academy's research laboratories, there is no limit except as imposed by inadequate financial resources. So, too, in the matter of keeping exhibits on display which are attractive in appearance and which have educational value, the Academy has done all that its financial resources supplemented by the generosity of an occasional public-spirited citizen would permit.

May 22, 1928

The present membership is made up of:

Patrons.....	19
Honorary members.....	19
Life members.....	83
Fellows.....	32
Members.....	948
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Total.....	1101

On January 1, 1927, the number of members stood at.....	1076
New members added during the year.....	112
Members lost by death.....	26
Members resigned.....	33
Members dropped for non-payment of dues... ..	28
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	87
Net gain during the year.....	25
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Leaving the membership on January 1, 1928, at.....	1101

The Academy carries on its list of patrons the following names:

*Living*

Mr. George C. Beckley	Mrs. Albert Koebele
Dr. Frank E. Blaisdell, Sr.	Mr. A. Kingsley Macomber
Mr. William B. Bourn	Mr. John W. Mailliard
Mr. William H. Crocker	Mr. Joseph Mailliard
Mr. Peter F. Dunne	Mr. M. Hall McAllister
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Mr. Charles Crocker	Mr. Alexander F. Morrison
Mr. John W. Hendrie	Mr. Amariah Pierce
Mr. Henry M. Holbrook	Mr. Ignatz Steinhart
Mrs. Charlotte Hosmer	Dr. John Van Denburgh



*Those who were called by death during 1927 are as follows:*

Mr. Richard Altschul. . . . .	Member. . . . .	November, 1927
Mr. Edward F. Bent. . . . .	Member. . . . .	November 26, 1927
Mr. Howard Brickell. . . . .	Member. . . . .	January 16, 1927
Mr. W. I. Brobeck. . . . .	Member. . . . .	July 27, 1927
Mr. Edmund C. Burr. . . . .	Member. . . . .	September 2, 1927
Mr. Wigginton E. Creed. . . . .	Member. . . . .	August 6, 1927
Dr. William H. Dall. . . . .	Life member. . . . .	March 27, 1927
Prof. Edwin Theodore Dumble. . . . .	Member. . . . .	January 26, 1927
Dr. Carl H. Eigenmann. . . . .	Honorary member. . . . .	May 25, 1927
Mr. William F. Herrin. . . . .	Life member. . . . .	February 28, 1927
Mr. Henry E. Huntington. . . . .	Member. . . . .	May 23, 1927
Mr. Alfred W. Manning. . . . .	Life member. . . . .	September 30, 1927
Dr. C. C. Nutting. . . . .	Honorary member. . . . .	January 23, 1927
Mr. James R. Pringle. . . . .	Member. . . . .	September 1, 1927
Mr. Ferdinand Reis, Jr. . . . .	Member. . . . .	July 22, 1927
Mr. Albert M. Rosenbaum. . . . .	Member. . . . .	November 3, 1927
Prof. Charles Sprague Sargent. . . . .	Honorary member. . . . .	March 22, 1927
Prof. George O. Sars. . . . .	Honorary member. . . . .	April 10, 1927
Mr. Henry T. Scott. . . . .	Life member. . . . .	June 27, 1927
Mr. John R. Scupham. . . . .	Life member. . . . .	May 30, 1927
Mr. Henry Hamilton Sherwood. . . . .	Member. . . . .	December 9, 1927
Mr. H. A. Snow. . . . .	Member. . . . .	July 28, 1927
Mr. Jacob Stern. . . . .	Member. . . . .	July 28, 1927
Mr. Chas. B. Turrill. . . . .	Member. . . . .	May 11, 1927
Dr. Chas. D. Walcott. . . . .	Honorary member. . . . .	February 9, 1927
Mr. Mountford S. Wilson. . . . .	Member. . . . .	April 21, 1927

In the year 1927 eleven free lectures were delivered at the stated meetings of the Academy as follows:

JANUARY 5. . . . . The Probable Source of Oil in Colombia and Venezuela, by Mr. F. M. Anderson, Honorary Curator, Department of Paleontology, California Academy of Sciences, San Francisco.

MARCH 2. . . . . Educational Activities in the National Parks, by Mr. Ansel F. Hall, Chief Naturalist in Charge of the Educational Division, National Park Service.

APRIL 6. . . . . A Tour of American Museums, illustrated, by Mr. Frank Tose, Chief Taxidermist, California Academy of Sciences, San Francisco.

MAY 4. . . . . The Pearl Button Industry, illustrated, by Mr. H. Walton Clark, Assistant Curator, Department of Fishes, California Academy of Sciences, San Francisco.

- JUNE 1.....More about Pearls and Pearl Buttons, illustrated, by Mr. H. Walton Clark, Assistant Curator, Department of Fishes, California Academy of Sciences.
- JULY 6.....Conservation and the Enforcement of Conservation Laws, by Mr. Joseph S. Hunter, Chief of Patrol, California State Fish and Game Commission.
- AUGUST 3.....Something about the Sunflower Family, illustrated, by Dr. Sidney F. Blake, Associate Botanist, Department of Agriculture, Washington, D. C.
- SEPTEMBER 7...General Impressions abroad with special reference to Aquariums and Museums, illustrated, by Dr. C. E. Grunsky, President, California Academy of Sciences.
- OCTOBER 5.....Early Reminiscences of the California Academy of Sciences, illustrated, by Col. George C. Edwards, First Vice-President, California Academy of Sciences.
- NOVEMBER 2...Observation on the Autumn Birds of the Santa Rita Mountains, Arizona, illustrated, by Miss M. E. McLellan, Assistant Curator, Department of Ornithology and Mammalogy, California Academy of Sciences.
- DECEMBER 7...A Problem in Animal Distribution in Southern Arizona, illustrated, by Mr. Harry S. Swarth, Curator, Department of Ornithology and Mammalogy, California Academy of Sciences.

The Sunday lectures at the Museum of the Academy in Golden Gate Park retain their popularity, and the kindness and good-will of those who contribute of their knowledge and experience on these occasions is sincerely appreciated. The following were delivered during the year 1927:

- JANUARY 9.....The Common Cold, by Dr. W. F. Cheney, Clinical Professor of Medicine, Stanford School of Medicine, San Francisco.
- JANUARY 16....Pain in the Back, its Nature and Causes, illustrated, by Dr. Arthur L. Fisher, Associate Clinical Professor of Orthopedic Surgery, Stanford School of Medicine, San Francisco.
- JANUARY 23....What do we know about Cancer, by Dr. Ludwig A. Enge, Associate Clinical Professor Gynecology, Stanford School of Medicine, San Francisco.

- JANUARY 30. . . . Chinese Medicine, by Dr. Emmet Rixford, Professor of Surgery, Stanford School of Medicine, San Francisco.
- FEBRUARY 6. . . . The Recent International Congress on Tuberculosis, by Dr. Robert A. Peers, Medical Director, Colfax School for the Tuberculous, Colfax, California.
- FEBRUARY 13. . . The Prevention of Food Poisoning, illustrated, by Dr. Karl F. Meyer, Professor of Bacteriology and Director of The Hooper Foundation for Medical Research, University of California.
- FEBRUARY 20. . . Psychoanalysis, False and Genuine, by Dr. E. W. Twitchell, Assistant Clinical Professor of Neurology, University of California, and Director of the Psychopathic Ward, San Francisco Hospital.
- FEBRUARY 27. . . Chasing Phantoms, by Dr. J. M. Wolfsohn, Associate Professor of Mental and Nervous Diseases, Stanford School of Medicine, San Francisco.
- MARCH 6. . . . . Goitre, illustrated, by Dr. Wallace I. Terry, Professor of Surgery, University of California.
- MARCH 13. . . . . The Ductless Glands, illustrated, by Dr. H. Lisser, Chief Ductless Glands Clinic, University Hospital, and Assistant Clinical Professor of Medicine, University of California.
- MARCH 20. . . . . The Causes and Treatment of Anemia, by Dr. Ernest H. Falconer, Associate Clinical Professor of Medicine, University of California.
- MARCH 27. . . . . Tropical Diseases in California, by Dr. A. C. Reed, Associate Professor of Medicine, Stanford School of Medicine, San Francisco.
- APRIL 3. . . . . The Exploration of the Island of Mindoro, Philippine Islands, illustrated, by Captain A. I. Eagle of the U. S. Air Corps.
- APRIL 10. . . . . Field Notes in Alaska, by Mr. George Haley, Professor of Biology, St. Ignatius College, San Francisco.
- APRIL 17. . . . . Parasitism in Nature, illustrated, by Dr. C. A. Kofoed, Professor of Zoology, University of California.
- APRIL 24. . . . . Practical Benefits of Experimental Biology, by Dr. William Ophüls, Dean of the Medical School and Professor of Pathology, Stanford School of Medicine, San Francisco.
- MAY 1. . . . . Modoc Lava-Beds National Monument, illustrated, by Mr. Paul J. Fair, in Charge of Exhibits, United States Forest Service.

- MAY 8. . . . . Is it possible to predict California's Rainfall several months in advance, illustrated, by Mr. E. A. Beals, Consulting Meteorologist, Alameda, California.
- OCTOBER 2. . . . . Popularizing Science through the Public Press, illustrated, by Dr. William Emerson Ritter, President, Science Service, Washington, D. C.
- OCTOBER 9. . . . . Golden Gate Park as a Botanical Garden, illustrated, by Miss Alice Eastwood, Curator, Department of Botany, California Academy of Sciences, San Francisco.
- OCTOBER 16. . . . . Home Life of the Alaska Willow Ptarmigan, illustrated, by Mr. Joseph Dixon, Economic Mammalogist, Museum of Vertebrate Zoology, University of California, Berkeley.
- OCTOBER 23. . . . . California's Forest Resources, illustrated, by Mr. J. W. Nelson, Assistant District Forester, United States Forest Service, San Francisco.
- OCTOBER 30. . . . . California's Opportunity, illustrated, by Captain Clark G. Sauers, in charge of State Parks, Indiana Conservation Commission, Indianapolis, Ind.
- NOVEMBER 6. . . . . The Grand Canyon of the Colorado, illustrated, by Mr. Harold Stein, Educational Director of the Boy Scouts, San Francisco.
- NOVEMBER 13. . . . . Delphiniums, by Major Newell Vanderbilt, San Rafael.
- NOVEMBER 20. . . . . Plant Breeding, illustrated, by Mr. G. P. Rixford, Librarian, California Academy of Sciences, San Francisco.
- NOVEMBER 27. . . . . Some Traces of Early Man, by Dr. John Sterling Kingsley, Emeritus Professor of Zoology, University of Illinois.
- DECEMBER 4. . . . . The California Academy of Sciences: Its Organization, History, Purposes, and Accomplishments, by Dr. Barton Warren Evermann, Director of the Museum and of the Aquarium of the California Academy of Sciences.
- DECEMBER 11. . . . . Organization and Purposes of the Department of Botany, by Miss Alice Eastwood, Curator, Department of Botany, California Academy of Sciences.
- DECEMBER 18. . . . . Organization and Purposes of the Department of Paleontology, by Dr. G. Dallas Hanna, Curator, Department of Paleontology, California Academy of Sciences.



## LIST OF ACADEMY PUBLICATIONS IN 1927

The scientific activities of the Academy are reflected in large part in its publications. These have been as follows in 1927:

OCCASIONAL PAPERS, XIII—CRETACEOUS DIATOMS FROM CALIFORNIA, by G. Dallas Hanna; pp. 1-49, plates 1-5. (Issued September 17, 1927.)

## PROCEEDINGS, FOURTH SERIES

Vol. XV, No. 17, pp. 501-510—REPORT OF THE PRESIDENT OF THE ACADEMY FOR THE YEAR 1926, by C. E. Grunsky, President of the Academy. (Issued March 31, 1927.)

Vol. XV, No. 18, pp. 511-546—REPORT OF THE DIRECTOR OF THE MUSEUM FOR THE YEAR 1926, by Barton Warren Evermann, Director of the MUSEUM. (Issued March 31, 1927.)

Vol. XVI, No. 1, pp. 1-51, 3 text figures—NOTES ON BIRDS OF SINALOA AND NAYARIT, MEXICO, IN THE FALL OF 1925, by M. E. McLellan. (Issued January 31, 1927.)

Vol. XVI, No. 2, pp. 53-85, plate 1, text figures 1-4—A CONTRIBUTION TO THE CLIMATOLOGY OF THE ICE AGE, by C. E. Grunsky. (Issued January 31, 1927.)

Vol. XVI, No. 3, pp. 87-95, plates 2, 3—THE MARINE MIOCENE DEPOSITS OF NORTH COLOMBIA, by Frank M. Anderson. (Issued January 31, 1927.)

Vol. XVI, No. 4, pp. 97-122—FISHES FROM EASTERN CHINA, WITH DESCRIPTIONS OF NEW SPECIES, by Barton Warren Evermann and Tsen-Hwang Shaw. (Issued January 31, 1927.)

Vol. XVI, No. 5, pp. 123-135, plate 4—EXPEDITION OF THE CALIFORNIA ACADEMY OF SCIENCES TO THE GULF OF CALIFORNIA IN 1921. MARINE MOLLUSCA OF THE ORDER OPISTHOBRANCHIATA, by Fred Baker and G. Dallas Hanna. (Issued April 22, 1927.)

Vol. XVI, No. 6, pp. 137-157, plate 5—EXPEDITION OF THE CALIFORNIA ACADEMY OF SCIENCES TO THE GULF OF CALIFORNIA IN 1921. GEOLOGY AND PALEONTOLOGY, by G. Dallas Hanna and Leo George Hertlein. (Issued April 22, 1927.)

Vol. XVI, No. 7, pp. 159-203, plates 6-12, 3 text figures—EXPEDITION TO GUADALUPE ISLAND, MEXICO, IN 1922. LAND AND FRESHWATER MOLLUSKS, by H. A. Pilsbry. (Issued April 22, 1927.)

- Vol. XVI, No. 8, pp. 205-229, plates 13, 14—FORAMINIFERA FROM THE EOCENE NEAR COALINGA, CALIFORNIA, by Joseph A. Cushman and G. Dallas Hanna. (Issued April 22, 1927.)
- Vol. XVI, No. 9, pp. 231-259, plates 15, 16—THE MAKING OF A SCIENTIFIC COLLECTION OF REPTILES AND AMPHIBIANS, by Joseph R. Slevin. (Issued April 22, 1927.)
- Vol. XVI, No. 10, pp. 261-359, 1 text figure—THE BIRDS AND MAMMALS OF MODOC COUNTY, CALIFORNIA, by Joseph Mailliard. (Issued April 27, 1927.)
- Vol. XVI, No. 11, pp. 361-363—NEW SPECIES OF CEANOETHUS, by Alice Eastwood. (Issued April 27, 1927.)
- Vol. XVI, No. 12, pp. 365-380, 4 text figures—RECORDS AND DESCRIPTIONS OF WESTERN BUMBLEBEES (BREMIDÆ), by Theodore H. Frison. (Issued April 27, 1927.)
- Vol. XVI, No. 13, pp. 381-395—EXPEDITION OF THE CALIFORNIA ACADEMY OF SCIENCES TO THE GULF OF CALIFORNIA IN 1921. THE CHRYSOMELIDÆ (COLEOPTERA), by H. C. Fall. (Issued April 27, 1927.)
- Vol. XVI, No. 14, pp. 397-499, text figures 1-287—A STUDY OF THE TERMINAL ABDOMINAL STRUCTURES OF MALE DIPTERA (TWO-WINGED FLIES), by Frank R. Cole. (Issued April 27, 1927.)
- Vol. XVI, No. 15, pp. 501-507—NEW GENERA AND SPECIES OF NORTH AMERICAN FISHES, by David Starr Jordan and Barton Warren Evermann. (Issued April 27, 1927.)
- Vol. XVI, No. 16, pp. 509-515—A GEOLOGIC SECTION IN THE CENTER OF THE SAN JOAQUIN VALLEY, CALIFORNIA, by J. A. Taff and G. D. Hanna. (Issued April 27, 1927.)
- Vol. XVI, No. 17, pp. 517-571, 1 text figure—A REVISION OF THE GENUS ORTHOCARPUS, by David D. Keck. (Issued June 11, 1927.)
- Vol. XVI, No. 18, pp. 573-604—A CONTRIBUTION TO OUR KNOWLEDGE OF THE NORTH AMERICAN CONOPIDÆ (DIPTERA), by M. C. Van Duzee. (Issued June 11, 1927.)
- Vol. XVI, No. 19, pp. 605-647, plates 17-21—PALEONTOLOGY OF THE MIOCENE OF LOWER CALIFORNIA, by Leo George Hertlein and Eric Knight Jordan. (Issued September 2, 1927.)
- Vol. XVI, No. 20, pp. 649-680, plates 22-24—NOTES ON NEW OR RARE FISHES FROM HAWAII, by David Starr Jordan, Barton Warren Evermann and Shigeho Tanaka. (Issued November 14, 1927.)

## INTERESTING ITEMS

The financial standing of the Academy appears in the Treasurer's Report. It is not necessary to review the same; but attention may be called to the fact that the indebtedness to the Hibernia Savings and Loan Society is being steadily reduced, about \$10,000 per annum. This loan represents the balance of what was borrowed after the destruction of the Academy building on Market Street in 1906, and now amounts to \$215,000. The income from the Market Street property in 1927 was \$89,000. The interest charges on borrowed money amounted to \$12,042. Except for an investment of \$1,650 in the purchase of American Trust Company stock, the net income of the Academy has been expended in the care and maintenance of its property and in furthering research work and expansion of its collection of natural history material.

It is with much gratification that I note valuable legal services rendered the past year by Mr. Edward Hohfeld, who in the same generous spirit as his predecessor, the late Mr. Alexander F. Morrison, volunteered his services. During the year his name has been added to the list of patrons of the Academy.

Important changes in the personnel of the Academy were the resignation of Mr. W. W. Sargeant, Secretary to the Board of Trustees, July 1, and the appointment to the position of Susie M. Peers, who for 12 years had been the efficient Secretary to the Director. Mr. Sargeant had been the faithful and very efficient secretary of the Board of Trustees since June 5, 1913. His resignation is a real loss to the Academy. Every member of the Board of Trustees, the Council and the Museum and Aquarium staffs will miss him greatly.

Besides lesser expeditions made by Curators and their assistants, opportunity was afforded to Mr. Joseph R. Slevin, Assistant Curator, Department of Herpetology, and our Chief of Exhibits, Mr. Frank Tose, to visit the Galapagos Islands as the guests of Captain G. Allan Hancock, late in the year. They secured material and made studies essential for future installations of groups of turtles and iguanas, for which, however, no space is yet in sight.



The large number of visitors to the Academy's museum, and to the Steinhart Aquarium give ample proof of the appreciation by the public of the Academy's effort to satisfy the universal demand for information on natural history subjects. Much more could be done if the available funds were more ample. Portable exhibits for school use, and lecturers in constant attendance at the museum may be suggested in this connection as features that could be added, but the need for these is overshadowed by the much greater need for additions to the Academy buildings.

Some day, it is hoped, not too far in the future, some generous friend of the natural sciences will provide the endowment that will make adequate additions possible, and some day perhaps a successful appeal may be made to the City of San Francisco to provide the funds for an expansion of the Steinhart Aquarium. Fine though this aquarium is, it does not yet fully meet the aspiration of the Academy, to maintain at San Francisco an establishment in which the wealth of the aquatic life in stream and ocean from all parts of the Pacific and its shores can be adequately displayed.

With sincere appreciation on the part of the officers of the Academy, for the loyal efforts of all who have contributed to its activities and have aided in its work, and counting on like further support, the Academy enters upon another year of service.

## XXIV

## REPORT OF THE DIRECTOR FOR THE YEAR 1927

BY

BARTON WARREN EVERMANN

*Director of the Museum and of the Aquarium*

The Annual Report of the Director for the year 1926 was presented to the Academy at the Annual Meeting, February 16, 1927.

The present report sets forth briefly the scientific and educational activities for the calendar year 1927.

The year has been an active one. Commendable progress has been made in all the departments. The members of the clerical force have performed their duties faithfully and efficiently. The members of the scientific staff have, as in the past, been active and efficient in building up and caring for the research collections in their respective departments, and in research work based on those collections.

## PERSONNEL

The personnel of the Museum has had a few important changes in the year. On February 28, Mr. Joseph Mailliard resigned his position as Curator of the Department of Ornithology and Mammalogy, and on the same date was appointed Curator Emeritus of that department. The position made vacant by Mr. Mailliard's resignation was at once filled by the appointment of Mr. Harry S. Swarth, effective March 1.

Mr. Mailliard became a member of the Academy in 1897. In 1919 he became a Patron, and on February 1, of the same year, he was appointed Honorary Curator of Ornithology and Mammalogy. This title was changed to that of Curator in 1920. Although relieved of administrative burdens, Mr. Mailliard continues to give the Academy the benefit of his counsel and is active in field and laboratory studies of birds and mammals.

Mr. Swarth had been Curator of Birds in the Museum of Vertebrate Zoology, University of California, since 1916, and has contributed greatly to our knowledge of the birds and mammals of western America. The Academy is therefore very fortunate in having in its Department of Ornithology and Mammalogy the active services of Curator Emeritus Mailliard, Curator Swarth and Assistant Curator Mary E. McLellan.

The employees of the Museum January 1, 1928, were as follows: Dr. Barton Warren Evermann, Director and Executive Curator of the Museum, and Editor of the Academy publications; Susie M. Peers, Secretary to the Board of Trustees; Joseph W. Hobson, Recording Secretary of the Academy; Alice Eastwood, Curator, and Mrs. Kate E. Phelps, assistant, Department of Botany; Edward P. Van Duzee, Curator, Hartford H. Keifer, Assistant Curator, Dr. Edwin C. Van Dyke, Honorary Curator, Dr. Frank E. Blaisdell, Research Associate, Mr. Walter M. Giffard, Research Associate, and Dr. Frank R. Cole, Associate Curator in Dipterology, Department of Entomology; Frank Tose, Chief, and Russell Hendrick, Clara Tose, and Cecil Tose, assistants, Department of Exhibits; Dr. Barton Warren Evermann, Curator, and H. Walton Clark, Assistant Curator, Department of Fishes; Joseph R. Slevin, Assistant Curator, Department of Herpetology; Dr. Walter Kendrick Fisher, Curator, Department of Invertebrate Zoology; Ignatius McGuire, Assistant Librarian; Harry S. Swarth, Curator, Mary E. McLellan, Assistant Curator, and Joseph Mailliard, Curator Emeritus, Department of Ornithology and Mammalogy; Dr. G. Dallas Hanna, Curator, Leo George Hertlein, Assistant Curator, Frank M. Anderson, Honorary Curator, and Dr. Roy E. Dickerson, Research Associate, Department of Paleontology; Constance W. Campbell, stenographer, part time; Lucie Hicks, office assistant, part time; Raymond L. Smith, general assistant; Mabel E. Phillips, check-room attendant; William C. Lewis, janitor; Hugh Jones, assistant janitor; Mrs. Johanna E. Wilkens, charwoman; Patrick O'Brien, day watch; Archie McCarte, night watch.



The Aquarium staff and other employees January 1, 1928, were as follows: Dr. Barton Warren Evermann, Director; Susie M. Peers, Secretary, part time; Constance W. Campbell, stenographer, part time; Lucie Hicks, office assistant, part time; Alvin Seale, Superintendent; Wallace Adams, Assistant Superintendent; Miss Dora Arnold, doorkeeper; Robert J. Lanier, electrician and assistant attendant; Clynt S. Martin, chief engineer; B. T. Culleton, first assistant engineer; R. J. Fletcher, second assistant engineer; Clyde E. Guidry, chief attendant; Jack Solini, first assistant attendant; L. R. Solini, second assistant attendant; Frank J. Maxwell, relief engineer and attendant; S. J. Shenefield, carpenter and general utility man; Chester L. Duncan, assistant collector; Patrick O'Neill, janitor; Patrick McArdle, assistant janitor; James Cavanaugh, day watch.

#### ACCESSIONS TO THE MUSEUM AND LIBRARY

The accessions to the Museum and Library have been many and valuable within the year. Those to the Library through exchange, purchase, and gift have been unusually large and important, and too numerous to list; only those received by gift are listed here. Following is a list of the accessions to the Museum:

Academy of Natural Sciences, Philadelphia, Pa.: 1 species of freshwater shell from Lake Tanganyika, Africa. Exchange.

Adams, Wallace, Steinhart Aquarium, San Francisco: 18 key-maps to U. S. Topographic sheets. Annual report of the Virgin Islands Experiment Station, 1926; North Carolina Economic and Geological Survey, Economic Paper No. 15. Gift.

Aguerrevere, S. E., Laredo, Texas: 6 land snails from Coahuila, Mexico. Gift.

American Museum of Natural History, New York, N. Y.: 6 frogs from Porto Rico, 8 from Nicaragua, 1 from Ecuador, 2 from Jamaica, 1 from Dominica, and 1 from Costa Rica. Exchange.

American Philosophical Society, Philadelphia, Pa.: 19 volumes of the Transactions of the American Philosophical Society and 8 volumes of the Proceedings. Gift.

- Anderson, F. M., Berkeley, Calif.: 2 lizards from Kern County, Calif. Gift.
- Archambault, Mr. and Mrs., Lemon, S. D.: 1 deer head covered, mounted and beaded by an Indian woman, Standing Rock Reservation, North and South Dakota. Gift.
- Arnold, Miss Dora, California Academy of Sciences, San Francisco: The Psychology of Bolshevism, by John Spargo. Gift.
- Associated Oil Co., San Francisco: 10 samples of well cores. Gift.
- Australian Museum, College Street, Sydney, Australia. 2 skulls *Otaria cinerea*, South Pacific Elephant Seal. Exchange.
- Baker, Dr. Fred, San Diego, Calif.: 50 specimens of Marine shells. Gift.
- Baker, Jack D., 435 1st Street, Santa Rosa, Calif.: 2 California Murres; 1 Baird's Cormorant; 1 Farallon Cormorant; 2 Brandt's Cormorant. Gift.
- Bancroft, Griffing, 2525 First St., San Diego, Calif.: 272 bird skins from Lower California. Exchange.
- Barker, C. A.: 1 shark skull. Gift.
- Barnes, Dr. Wm., Decatur, Illinois: 618 moths, determined. Gift.
- Bemis, Mrs. Florence E., Oakland, Calif.: 9 bound vols. Gift.
- Bishop, Dr. C. S., Albany, N. Y.: 2 turtles from New York. Gift.
- Blaisdell, Dr. Frank E., Sr., 1520 Lake Street, San Francisco: Skeleton of a domestic cat; 1 skunk skeleton, complete; 4 mammal skulls; 14 bird skulls; 86 Diptera from Mokelumne Hill, Calif.; 13 numbers of Science (current); Stanford University Publications, University series No. 1; 118 miscellaneous separates; 118 entomological separates; 3 unbound copies of "Plaga de La Langosta en Mexico"; Fisher, Hawks and Owls, 1893 (bound); Goss, Birds of Kansas, 1886 (bound). Gift.
- Blatchley, Dr. W. S., 1530 Park Avenue, Indianapolis, Indiana: 142 Hemiptera from Florida, etc., including some paratypes. Purchase.
- Braun, Miss Annette F., 3702 May Street, Cincinnati, Ohio: 67 specimens of Microlepidoptera. Gift.
- Brown, V. S.: 162 insects from California. Gift.
- California Botanical Club, San Francisco, through Miss Alice Eastwood: Humboldt and Bonpland, Monographies des Melastoma, parts 1 and 2; Miller, Philip, Figures of Plants, 2 volumes. Gift.
- California Fish and Game Commission, San Francisco: 3 birds, Tinamous (3 species). Gift.

- Campbell, Mrs. Constance W., California Academy of Sciences: 1 bat, *Myotis yumanensis sociabilis* (mummy); 2 Salamanders from Marin Co., Calif. Gift.
- Carnegie Institution of Washington, Washington, D. C.: Publications Nos. 330 vol. 2, 375, 371, and 364; Year Book for 1926. Gift.
- Cavanaugh, James, Steinhart Aquarium, San Francisco: 21 numbers of "Douglas 20." Gift.
- Choussy, Felix, San Salvador: Two bound volumes, Flora Salvadorena, by Choussy. Gift.
- Clark, H. Walton, California Academy of Sciences, San Francisco: 21 numbers of Science; nest of Horned Lark containing three eggs; 1 mole, *Scapanus latimanus latimanus*, in flesh, from Golden Gate Park, S. F.; Missouri Botanical Garden, Bulletin, 44 numbers; International Vereinigung für Limnologie, Verhandlungen, 1922, 1923, 2 vols., and two pamphlets describing meetings; 5 pamphlets by Gunnar Alm. Gift.
- Classen, John W., through Dr. G. Dallas Hanna: 1 bird's egg, Chachalaca (*Ortalis* sp. ?). Gift.
- Classen, W. J., Menlo Park, Calif.: 3 fossil Miocene fish from Lompoc, Calif.
- Conolley, E. D., Holbrook Building, San Francisco: 2 Rocky Mountain Sheep heads and 1 Black-tailed Deer head. Gift.
- Cottle, J. E., 2473 Post St., San Francisco: 1 paratype of *Sabulodes cotlei* Barnes; miscellaneous insects from California. Gift.
- Deckert, Richard F., Miami, Florida: 15 snakes from Florida. Purchase.
- Dickerson, Dr. Roy E., Lima, Peru: One package of Carboniferous fossils from South America. Gift.
- Dudley, Chester, Modesto, Calif.: 57 plants. Gift.
- Eagle, Capt. A. T., Crissy Field, San Francisco: 1 mounted Tamarao head. Gift.
- Eastwood, Miss Alice, California Academy of Sciences, San Francisco: American Forests and Forest Life 1927; 34 miscellaneous numbers of Science; U. S. Dept. Agriculture, Yearbook, 1926, 1927; American Journal of Botany, 1927; Sachs, Lectures on the physiology of plants (bound); 9 quarterly issues of the Smithsonian Miscellaneous Collections; Scientific Monthly, 14 misc. numbers; Bulletin Pan-Pacific Union, 9 numbers; Mid-Pacific Magazine, Vols. 27-35; California Historical Society Quarterly, 4 volumes unbound. Gift.
- 85 plants from Pacheco Pass and Los Baños; 78 plants from Eldorado County; 289 plants from San Luis Obispo County; 293 plants from Plumas County; 152 plants from the State of Nevada; 80 miscellaneous. Exploration.



Evermann, Dr. Barton Warren, California Academy of Sciences, San Francisco: Connecticut Fish and Game report, 1925-1926; California Division of Water Rights Biennial report, 1926; Review of Applied Entomology, 9 numbers; San Francisco Report on Underground Water Supply, 1913, 173 pp.; 10 numbers, Columbia Port Digest; 4 numbers, Overland Monthly; 10 numbers, The Outlook; 9 numbers, Yosemite Nature Notes; 22 numbers, Science; 3 numbers, Natural History; Oklahoma Academy of Sciences Bull. Vol. 4, pts. 1, 2; 1 number, Brooklyn Museum Quarterly; 3 numbers, Roosevelt Wild Life Bull.; 2 numbers, Journal Marine Biological Association; Plymouth Aquarium Guide Book; 5 descriptive pamphlets, Marine Biological Association; Provincial Museum of Natural History report 1925; Illinois State Museum of Natural History General Guide; Museum Graphic, vol. 1, No. 1; U. S. Dept. Agric. Bulletins, 5 numbers; Pan-Pacific Food Conference, First, Proceedings; Pan-Pacific Educational Conference, First, Proceedings, 2 copies; Societe des Etudes Oceaniennes, Papeete, Bulletins 11, 12, 18, 19; Southern California Academy of Sciences, Bull., 3 numbers; American Museum of Natural History, Annual Report 1921; Bernice Pauahi Bishop Museum Director's Reports, 1902, 1905, 1900; Standard Oil Bulletin, 4 numbers; Richards, Industrial Art and the Museum (bound); Fur Journal, 1927; Canadian Fisheries Expedition, 1914-1915, 495 pp; Holder, C. F., Santa Catalina, 1895, 126 pp; American Museum of Natural History, General rules for the preparation of manuscript, 14 pp., and Styles and sizes of types, 4th ed., 20 pp; Aquatic Life, 16 numbers; Aquarium, two numbers; Amateur Aquarist, 5 numbers; Berlin Aquarium Zoologischer Garten Führer, 1925 47 pp; American Fish Culturist, 4 numbers; Catalina Islander, 15 numbers, and complete file for 1927; National Parks Nature Notes, 28 numbers; National Parks Portfolio; Parks and Recreation, 1 number; Chicago Academy of Sciences descriptive handbook 1911; "William Powell Wilson" 16 pp; Overland Monthly, 8 numbers; Sherwood, George H., Free Education by the American Museum of Natural History, 1918; The Colorado Museum of Natural History (guidebook) no date; New York Zoological Society Bulletin V. 27, No. 2; Zoologica V. 9, No. 1; Torrey, State parks and recreational use of state forests, 1926; Publications Am. Museum Assn., new series, No. 2; Museum Journal, Philadelphia, V. 7, No. 2; Amer. Museum of Natural History, Rules and Regulations, 1912; Charleston Museum Bulletin, V. 12, No. 6, 1916; Contributions to Canadian Biology, The Sea-lion Question, 1918; Santa Barbara Museum of Natural History, 1926; Proc. Calif. Acad. Sci., V. 15, No. 16, V. 12, No. 30; Toronto Univ., Studies, Biological Series, No. 24; Camera Craft, 3 numbers; National Association of Secondary School Principals, 5th yearbook, 1921; Wisconsin Magazine of History, June 1921; Report of the Underground Water Supply of San Francisco County, 1913; National Conference on Outdoor Recreation, Organization and Program, 1924-1925 (2); Joransen, Einar, The Danegeld in France, 1924; Cin-

cinnati Museum Ass'n, Annual Reports, 1924, 1925; U. S. Bureau of Education, 1914 Bulletin, No. 48; Rhode Island Agric. Experiment Sta., 39th Annual Report; Laws of the State of Indiana, 1910, 1050 pp., bound; Doheny Scientific Expedition in the Hava Supai Canyon, Northern Arizona, 40 pp.; Meek, Marine Fishes of Panama, Part 2, 707 pp; Rockefeller Foundation Report for 1926; miscellaneous bulletins of the U. S. Dept. Agric., 12 numbers; Cincinnati Museum Assn., Report for 1926; Rand McNally Map of Mississippi; National Parks Bulletin 43; Illustrated Bulletin, Glacier National Park; Report U. S. Forester, 1924; S. P. Map of California (3 copies); Bull. Amer. Game Protective Association, vol. 13, No. 1, Jan. 1924; Museum Bull. Staten Island Assn., May 1916, No. 94; St. Louis Natural History Mus. Assn., Bull. vol. 1, Nos. 2, 4; Rockefeller Foundation Review, 1925; Report of the Museum of Zoology, University of Michigan, 1926; National Conference of Outdoor Recreation, Circ. No. 1, and Proc. 1926; International Comm. for Bird Protection, Bull., 1927; Permanent Wild Life Protection Fund, Results Bag Limit Campaign, 1925; Forest and Outdoors, Feb. 1927; Logging Operations in Yosemite Nat'l Park, Van Name, 16 p.; Iowa Fish and Game Warden Report, 1924; Vermont Fish and Game Report, 1926; Oakland Free Library, Report, 1925-1926; Supplement to Hydrographic Office publ. No. 84, 1923; U. S. Forest Service, Manual of Fish and Game Management, Dist. 4; American Bison Society, 16th census Jan. 1, 1924; Forestry Primer, 1926; Amer. Assn. Museums, 12th meeting, Preliminary program, 1917; Report of Committee of training for museum workers; 312 other pamphlets and 7 other bound volumes. Gift.

Evermann, Barton Warren, and G. Dallas Hanna, California Academy of Sciences: 1 can of freshwater mollusks from Pyramid Lake, 2 species. Exploration.

Foehl, A. Jr. & Co., Philadelphia, Pa.: 1 turtle from Africa. Purchase.

Frierson, L. S., Jr., Shreveport, La.: 2 lizards, 5 frogs, and 12 salamanders from Louisiana. Exchange.

Giffard, W. M., Honolulu, T. H.: 321 determined Hymenoptera from the mountains of California; 187 miscellaneous insects taken by Mr. Kellers in Sumatra; 9 bird skins and 12 mounted birds, from California, from the collection of Albert Koebele; 7 skins of native Hawaiian birds collected by Henshaw and others, 1899-1901. Gift.

Gifford, E. W., Anthropological Museum, Affiliated Colleges, San Francisco: 1 dove, *Gallicolumba rubescens*, in flesh. Aviary specimen. Gift.

Gloyd, Howard K., Kansas State Agricultural College, Manhattan, Kansas: 19 snakes (alive). Exchange.

17 snakes and 1 lizard from Kansas; 2 snakes from Michigan. Purchase.

May 22, 1928

- Grinnell, Dr. Joseph, University of California: 7 alcoholic specimens, topotypes, of *Salmo nelsoni* Evermann. Gift.
- Gray Herbarium, Harvard University, Cambridge, Mass.: 75 botanical specimens from the New England States. Exchange.
- Greene, Morris, Crystal Springs Water Co., San Francisco: 1 hummingbird, *Selasphorus alleni*, in flesh, from Golden Gate Park, San Francisco. Gift.
- Griffith, Arthur C., 207 Glen Drive, Sausalito, Calif.: 1 owl, *Bubo virginianus saturatus*, mounted, from Marin Co., Calif. Gift.
- Grout, A. J., Richmond Borough, New York City, N. Y.: 311 specimens of mosses. Purchase.
- Grubb, W. A., San Francisco: Guides of the Aquariums at Monaco and Milan. Gift.
- Gunder, J. D., 849 Linda Vista Ave., Pasadena, Calif.: 52 miscellaneous insects from Death Valley, Calif. Gift.
- Haley, Professor George, Berkeley, Calif.: 1 Nunivak native spear used in spearing water birds; 510 specimens of mollusks; 2 sounding waxes; 1 bottle of sediment; 1 can of diatom-bearing mud; 1 can of minerals; 1 jar of diatom-bearing sand and grass; 1 shell from St. Lawrence Island, Alaska; 234 plants from Alaska, 36 from Nevada, and 67 from Sierra Co., Calif. Exploration.
- Hall, R. Radcliffe, Barbados, B. W. I.: 4 samples of diatomaceous earth from Barbados. Exchange.
- Halvorsen, E. E., Coalinga, Calif.: 12 specimens of fossil mollusks from Coalinga, Calif.; and 2 small sacks of Tertiary fossils. Gift.
- Hanna, G. Dallas, California Academy of Sciences, San Francisco: 2 nests and sets of eggs of *Vermivora celata lutescens*, from Santa Cruz County, Calif.; 1 tree frog from Kern County, Calif.; 40 specimens of land snails; 39 insects from California; 38 miscellaneous insects from Kern Co., Calif.; Scientific Monthly, 1927; 5 numbers of Science; 4 numbers of the Condor; Climatological data, Alaska section, 1925; Scientific American, April-June, 1927; National Geographic Magazine, Vol. 44, No. 1, July, 1923; Canada Dept. Mines, Abrasives, 3 pts. 1927; General information regarding the Territory of Alaska, 1926, 59 pp.; Alaska Fishery Industries 1926, 200 pp.; Bulletin of the American Association of Petroleum Geologists, Vols. 8-11; National Research Council, Researches in Sedimentation, 1924-1926, 2 volumes; 62 separates; California Fish and Game, Vol. 13, No. 1. Gift. 90 specimens, 4 species of mollusks from Donner Lake, Calif. Exploration.
- Hanna, G. Dallas, and L. G. Hertlein, San Francisco: 69 land shells and 2 boxes of Cretaceous fossils; 1 box of marine Pliocene fossils. Exploration.



- Hanna, Marcus A., Houston, Texas: 4 fossil crabs from Washington. Gift.
- Hapemen, Dr. H., Minden, Nebraska: 13 botanical specimens. Exchange.
- Harrold, C. G., Winnipeg, Manitoba, Canada: 27 mammal skins and skulls, 38 skulls, and 9 skeletons, from Alaska; 555 bird skins and 10 skeletons, representing 92 species of Alaskan birds; 12 sets, 39 eggs, of eggs and nests from Alaska; and 74 plants from Alaska. Exploration.
- Hart, Cecil, Montebello, Los Angeles Co., Calif.: 114 plants from San Bernardino Co., Calif. Gift.
- Harter, Mrs. H. C., Lindsey, Calif.: 8 specimens of California plants. Gift.
- Heath, John M., 207 Church St., San Francisco: Nest of Yellow Jacket, from near Lorane, 30 miles west of Eugene, Ore., collected by Kenneth Arthur, Lorane, Ore., January 27, 1927. Gift.
- Henderson, L. F., University of Oregon, Eugene, Oregon: 1187 botanical specimens from eastern Oregon. Purchase.
- Hertlein, Leo George, Palo Alto, Calif.: 2 boxes of Cretaceous fossils from Mexico. Gift.
- Hertlein, L. G., and E. L. Rixford, California Academy of Sciences: 60 species, 1,076 specimens of marine mollusks from Santa Rosa Island; 20 species, 121 specimens of marine mollusks from San Miguel Island; and 6 boxes of Miocene fossils from Santa Rosa, San Miguel and Santa Cruz islands. Exploration.
- Hill, C. L., Bureau of Forestry, Ferry Building, San Francisco: 1 Miocene beetle from mine near Quincy, Calif. Gift.
- Holm, Adolph, Redwood City, Calif.: 6 botanical specimens from Santa Clara Co.; and 1 *Sorex*, in flesh, from San Mateo Co., Calif. Gift.
- Hudson, Dr. J. W., Ukiah, Calif.: 12 specimens of California plants. Gift.
- Hunt, Nelson J., 1021 Wayne St., Sandusky, Ohio: 2 seed necklaces from West Indies; and 1 seed of tropical plant (nut). Gift.
- Jackson, Mrs. Belle R., San Rafael, Calif.: 6 specimens of plants from Placer Co., Calif. Gift.
- Japan National Research Council, Tokyo, Japan: Scientific Japan (bound); Souvenir of the Third Pan-Pacific Scientific Congress; Minutes of the Final Meeting, Third Pan-Pacific Scientific Congress; and 2 maps, Geology of Nippon and Earthquake of Oct. 1925. Gift.

- Jessel, M. S., Lincoln High School, San Francisco: 156 specimens of plants from General Grant National Park. Gift.
- Jones, Miss Katherine, University of California: 20 specimens of plants from New Zealand. Gift.
- Kauffman, E. R., Rialto Building, San Francisco: 3 numbers of the Pacific Sportsman, completing the Academy's set to date. Gift.
- Keifer, H. H., California Academy of Sciences, San Francisco: 2275 insects taken at Oroville, Calif., etc. Exploration.
- Klauber, L. M., San Diego, Calif.: 24 snakes and 2 lizards from San Diego County, Calif. Exchange.  
2 snakes from Lower California; 7 snakes from San Diego County, Calif.; 2 salamanders from San Diego County, Calif.; and 115 toads from San Diego County, Calif. Gift.
- Kruger, Miss, Laurel Hill, San Francisco: 2 Japanese birds, in flesh. Died in captivity. Gift.
- Knight, Dr. Harry H., Iowa State College, Ames, Iowa: 335 specimens of N. Am. Miridæ, representing 201 species with 178 paratypes. Exchange.
- Kobo, Kasuo: 2 separates in Japanese on the fauna of Loo-choo. Gift.
- Koebele, Mrs. Fanny, Waldkirch, Germany: 44 bird skins, and 2 land snails. Gift.
- Kusche, J. August, 5416 Lemon Grove Ave., Hollywood, Calif.: 1364 pinned moths from Chiricahua Mts., Arizona; and 240 botanical specimens from Arizona. Purchase.
- Lastreto, C. B., San Francisco, Calif.: 12 numbers of the Scientific Monthly; 6 numbers of the Condor; Grinnell, Geography and Evolution of the Pocket Gopher (reprint); Pan-Pacific Union Bulletin, No. 88, May 1927; 2 separates from the Condor; 3 numbers of the Auk; Bull. Amer. Meteorological Soc., 2 numbers; Kirsten, The First Second of Eternity; American Meteorological Society, Bull. 1923 complete; 1924, January and February; 1925, February to December; 1926, January to March, and November and December; The Commonwealth, "Legislative Preparedness for War," October 26, 1926; Periscope, January, 1927; Science, January 28, 1927; Academy Proceedings, Vol. 15, Nos. 12-16; Vol. 16, Nos. 2, 3, 4, 10; title page for Vol. 2, parts 1 and 2, and Vol. 14; Occasional Paper No. 12. Gift.
- Leach, E. R., 217 Hillside Ave., Piedmont, Calif.: 32 miscellaneous insects mostly from Trinity County, Calif.; 1 snake from Mendocino County, Calif.; 52 insects from India; and 1 snake from Shasta County, Calif. Gift.

- Leach, Frank A., Diablo Country Club, Diablo, Calif.: 1 bat, *Corynorhinus rafinesquii townsendii*, from Sonoma County, Calif.; 1 nest of Western Gnatcatcher (*Polioptila caerulea amænissima*). Gift.
- Lewis, W. C., California Academy of Sciences, San Francisco: 1 hummingbird, *Selasphorus alleni*, in flesh, from Golden Gate Park, San Francisco. Gift.
- Mailliard, Joseph, California Academy of Sciences: 1 snake (*Micrurus euryxanthus*) from Arizona; Oologist's Record, Volumes 1-3. Gift. 136 specimens, 7 species, of fishes from Arizona; 10 mammal skins and skulls from Patagonia, Santa Cruz County, Ariz.; and 424 bird skins from Santa Cruz County, Ariz. Exploration.
- Martin, J. O., California Academy of Sciences, San Francisco: 1 wren, *Thryomanes bewicki spilurus*, in flesh, from Golden Gate Park; 89 moths taken at Alma, Calif.; Revision of the Tenebrionidæ of America North of Mexico. Gift. 4865 insects from Texas; 560 insects, mostly beetles, from California; 3 Salamanders from Arizona. Exploration.
- Mason, H. L., Berkeley, Calif.: 245 botanical specimens from Revilagigedo Expedition of the Academy. Exploration.
- MacCallum, Mrs. Alexander, Mendocino City, Calif.: 84 miscellaneous plants, mounted. Gift.
- McAllister, M. Hall, San Francisco: Map of Monterey Peninsula, drawn for the Del Monte Company by Jo Mora; Scientific American, 1927. Gift.
- McDonald, Miss Julia, 1221 Lombard Street, San Francisco: 20 California plants. Gift.
- McLaren, John, Golden Gate Park, San Francisco: 1 curassow, *Crax alector*, in flesh, from Golden Gate Park; 1 kangaroo, *Macropus*, in flesh, from Golden Gate Park, San Francisco; 1 elk, in flesh, from Golden Gate Park; 1 ostrich, *Struthio camelus*, in flesh, from Golden Gate Park. Gift.
- McLellan, Miss Mary E., California Academy of Sciences, San Francisco: U. S. Dept. Agri. Official Record, 1927; 81 miscellaneous insects from Mazatlan, Mexico; 46 miscellaneous insects from Santa Rita Mts., Arizona; 50 freshwater shells from Niles Canyon, Calif.; 1 lizard, *Phrynosoma douglassii hernandesi*; 1 frog, *Rana pipiens*. Gift. 90 skins and skulls, and 2 alcoholics of mammals from Pima and Santa Cruz counties, Arizona; 274 bird skins from Pima and Santa Cruz counties, Arizona. Exploration.
- Meadows, Don C., Avalon, Santa Catalina Island, Calif.: 1 snake, *Lampropeltis getulus boylii*; and 1 lizard, *Uta stansburiana hesperis*, from Santa Catalina Island. Gift.

- Meakin, Perc., Modesto, Calif.: 1 owl, *Bubo virginianus pacificus*, alive, from Modesto, Calif. Gift.
- Merrill, G. K., 309 Broadway, Rockland, Maine: 24 specimens of lichens. Purchase.
- Mexia, Mrs. Ynez, Botanical Department, University of California: 200 specimens of Mexican plants. Purchase.
- Missouri Botanical Garden, St. Louis, Missouri: Bulletin Missouri Botanical Garden, Vol. 1, complete, and 85 miscellaneous numbers supplementing Academy's file. Gift.
- Montgomery, A. C., SS. Montagu, San Francisco: 6 birds, in flesh, from the Philippine Islands and the Celebes. Gift.
- Mori, T., 1511 Geary St., San Francisco: 3 teal ducks, 1 *Nettion crecca* and 2 *Nettion formosum* from Japan? (in flesh); 1 bird, Java Nonpareil (*Erythrura prasina*); and 2 birds, Bamboo Partridge (*Bambusicola thoracica*). Gift.
- Museum of Comparative Zoology, Cambridge, Mass.: 1 lizard from Jamaica. Exchange.
- Myers, Mr., Sportmans Club, San Francisco: 4 Gambel's Quail and 4 California Quail. Gift.
- Nast, Dr. Ernest, 4112 24th Street, San Francisco: 488 insects, largely moths, from the Sierra of California. Gift.
- National Association of Audubon Societies: Portraits and Habits of our Birds, two bound volumes; 20 pamphlets. Gift.
- National Herbarium of the U. S. National Museum, Washington, D. C.: 100 specimens of ferns and 39 cryptograms. Exchange.
- National Zoological Park, Washington, D. C.: 2 Tortoises (*Testudo tornieri*) from Africa. Gift.
- Oldroyd, Mrs. I. S., Stanford University, Calif.: 2 marine shells.
- Oregon Historical Society, 253 Market St., Portland, Ore.: Carey, The Oregon Constitution, 543 pp., bound. Gift.
- Otis, Ira C., Seattle, Wash.: 26 specimens of plants from Washington State. Gift.
- Pacific Division, A. A. A. S.: Science News-Letter, 57 current numbers; Science, 67 current numbers; 34 catalogues of various educational institutions; Western Society of Naturalists membership roll, 1916; 26 A. A. A. S. Pacific Division announcements; American Medical Directories for 1921, 1918, 1916. Gift.



- Paige, Mrs. Paul, 8101 Geary Street, San Francisco: 1 wildcat, *Lynx eremicus californicus*, in flesh, from Alameda County, Calif.; and 1 Formosan Teal duck, male. Gift.
- Palmer, R. H., Seattle, Washington: 4 trays of Pleistocene fossil shells from Oaxaca, Mexico; and 1 tray of recent shells from Oaxaca, Mexico. Gift.  
Diatom bearing materials. Exchange.
- Palmer, T. Chalkley, Delaware County Institute of Science, Media, Penn.: 8 numbers of the Proceedings of Delaware County Institute of Science. Gift.
- Palmer, Dr. T. S., Washington, D. C.: International Congress of Soil Science, Program, and Proceedings of Committees I-VI. 4 vols. Gift.
- Pammel, Dr. L. H., Iowa State College: Weed flora of Iowa, 1926 edition, bound; Prominent Men I Have Met, II; and 10 separates. Gift.
- Patterson, W. J., 1843 9th Ave., San Francisco: 51 specimens of various ores and minerals from California and Arizona. Gift.
- Phelps, Mrs. Kate E., 580 McAllister Street, San Francisco: 7 botanical specimens from Washington State. Gift.
- Piper, Dr. C. V.: 25 specimens from his herbarium. Gift.
- Peers, Miss Susie M., California Academy of Sciences, San Francisco: Current issues of Science for 1927. Gift.
- Peterson, A., San Bruno, Calif.: 1 cetacean ear bone, obtained in New York, originally from Alexandria. Gift.
- Poling, O. C., Laguna Beach, Calif.: 32 moths from Arizona and Texas. Gift.
- Pomona College, Claremont, Calif.: 805 duplicate botanical specimens from the Marcus E. Jones collection. Exchange.
- Pope, Dr. Emma, Panoramic Way, Berkeley, Calif.: 1 Gnu head (mounted). Gift.
- Pope, Mrs. Saxton, San Francisco: 3 lantern slides of snake heads. Gift.
- Reed, Miss Elizabeth Mary, 751 14th Ave., San Francisco: 1 sloth, *Bradypus* skin from Brazil. Gift.
- Rhodes, Capt. H. W., Superintendent, 18th Lighthouse District, San Francisco: 41 bird eggs from Roncador Reef, Carribean Sea, collected May 26, 1927. Gift.
- Rixford, Dr. Emmet, San Francisco: The American Museum Endowment, Annual Report of the American Museum for 1925; and 15 specimens of land and freshwater shells. Gift.

- Robison, Ansel W., 1072 Market St., San Francisco: 1 parrot, *Melopsittacus undulatus*, in flesh, domestic; 1 *Myadestes obscurus occidentalis*, in flesh, from Mexico; 1 Blue Mountain Lory (*Trichoglossus*); 1 Rosella Parakeet (*Platycercus eximius*); 1 Red-rump Parakeet (*Psephotus haematonotus*); 1 Kagu (*Rhinochetus jubata*); 1 *Uroloncha leucogastroides*, in flesh; 1 bird, *Gallinula chloropus*, in flesh, from the Philippine Islands; 1 monkey, *Saimiri oerstedii*, in flesh, from Central America; 1 parrot, *Chalcopsittacus ater*, in flesh, from Ceram. Gift.
- Ronneberg, Trygve, Crocker Building, San Francisco: 3 mounted birds, 1 *Pavo cristata*, 1 *Colaptes cafer collaris*, and 1 *Cyanocitta stelleri frontalis*. Gift.
- Ruddock, George, San Francisco: Marloth's Flora of South Africa, 4 volumes in 5, quarto; bound in cloth. Gift.
- Ruthling, Paul D. R., Santa Fe, New Mexico: 3 snakes from New Mexico; and 1 snake and 1 lizard from Mexico. Gift.
- Sanford, Miss Helen, 152 17th Ave., San Francisco: 32 specimens of plants from San Diego. Gift.
- Sargeant, W. W., California Academy of Sciences, San Francisco: Scientific Monthly, Vol. 20, Nos. 3-6; 21, complete; 22, Nos. 1-4; 23, complete; 24, Nos. 1-5; National Geographic Magazine, Vols. 48-50 complete; American Association for the Advancement of Science Proceedings for 1915 and 1921, Program, 73d meeting, 1921 (2 copies); 74th meeting, 1922; Commonwealth Club Transactions, 25 numbers; "The Commonwealth," 54 numbers; Directories of Schools and Colleges in the U. S., 52 numbers; "Tee-Bee," 31 numbers; Adam, Fundamental Hypotheses (bound); and Architect and Engineer, March 1924. Gift.
- Saunders, C. F., through Miss Alice Eastwood: James Herbert Veitch, A Traveller's notes, London, privately printed, 1896.
- Schaffer, Richard, Ford Agency, Merced, Calif.: 3 specimens of plume-mets(?) from Merced, Calif. Gift.
- Seitz, Mrs. L., Atascadero, Calif.: 19 botanical specimens from California. Gift.
- Sinsheimer, Gertrude, San Luis Obispo, Calif.: 24 botanical specimens from San Luis Obispo County. Gift.
- Slevin, Joseph R., California Academy of Sciences, San Francisco: 35 separates on herpetology; excerpts by Pilsbry and Ferris, "Mollusca of the Southwestern States, VII," from Proc. Acad. Nat. Sci. Philadelphia, 1915. Gift.
- 6 land shells from San Diego County, Calif; and 401 specimens of reptiles from San Diego County, Calif. Exploration.

- Slevin, Louis S., Carmel, Calif.: The L. S. Slevin Collection of Coleoptera, about 30,000 specimens; 1346 moths from Carmel, Calif.; 20 freshwater shells from Soledad, Calif.; 3 salamanders from Carmel, Calif. Gift.
- Smith, L. S., U. S. Forest Service, Nevada City, Nevada: 50 specimens of California plants. Gift.
- Smith, Raymond, California Academy of Sciences: Bull. Museum Comparative Zoology, V. 67, No. 11. Gift.
- Solini, Jack, Steinhart Aquarium, San Francisco: 1 mole, *Scapanus latimanus latimanus*, in flesh, from Golden Gate Park. Gift.
- Southern Biological Supply Co., New Orleans, La.: 104 lizards from New Orleans, La. Purchase.
- Stanford University, California: Sample of diatomite from Lower California. Exchange.
- Steinbeck, J. W., 611 Bristol Ave., Stockton, Calif.: 1 *Argusianus argus*, in flesh. Aviary specimen. Gift.
- Steinhart Aquarium, Golden Gate Park, San Francisco: 1 Nine-banded Armadillo (*Tatusia novemcincta*), shell and skull; and 20 salamanders from Napa County, Calif. Gift.
- Stipp, Thomas F., Laredo, Texas: 1 box of Tertiary and Cretaceous fossils from Mexico and Texas; 68 bound volumes, 715 unbound parts of volumes and pamphlets on geology and related subjects; and 3 boxes of fossil shells from eastern Mexico. Gift.
- Stipp, T. F., and Hertlein, L. G., California Academy of Sciences: 2 boxes of Pliocene and Pleistocene fossils from San Pedro, Calif.; and 9 land shells from near Laredo, Texas. Exploration.
- Strong, A. M., Los Angeles, Calif.: 7 specimens of marine shells from various places in California. Exchange.
- Sutkamp, Mrs. A. C., 2220 Funston Ave., San Francisco: 3 sets of plumes mounted for millinery purposes. Gift.
- Sutcliffe, Mrs. E. C., 700 Lake Street, San Francisco: 22 botanical specimens from California. Gift.
- Swanstrom, Mrs. Evelyn, Savoy Hotel, San Francisco: Abalone shells from Montaro Beach, San Mateo County, Calif. Gift.
- Swarth, H. S., California Academy of Sciences, San Francisco: U. S. Dept. of Agriculture Official Record, 22 numbers; 2 separates; The Survey, 22 numbers; Field Museum Report 1926; U. S. National Museum Report 1925, 1926; Philadelphia Museums Report 1922-1923; Bird-Lore, 5 numbers; American Museum Report 1925; U. S. Geological Survey Bulletins, 342, 481; Audubon Bulletin, Winter of 1917-1918 (Illinois); U. S. Dept. of Agri. Miscellaneous Circular 18; Mil-

waukee Public Museum, Yearbooks for 1921, 1922, 1923, 1924, 1925; and 8 specimens of plants from Arizona. Gift.

321 mammal skins and skulls from Arizona; 419 bird skins, 1 skeleton, 10 sets (26 eggs) of eggs, and 2 nests from Arizona; 2 lizards from Arizona. Exploration.

Swarth, Mrs. Winifern W.: 52 mounted specimens of plants from the San Jacinto Mts. Gift.

Takahashi, R., Dept. of Agriculture, Government Research Institute, Tokyo, Japan: 1 brochure, Aphididæ of Japan, Part 5. Gift.

Taff, J. A., Associated Oil Co., San Francisco: Third Annual Report of the Geological Survey of Texas (1891). Gift.

Taylor, Dr. W. P.: 43 specimens of plants from Arizona, Colorado and New Mexico. Gift.

Tose, Frank, California Academy of Sciences, San Francisco: 69 plants from southern California. Gift.

56 bird skins; 39 mammal skins; 9 reptile skins; 15 reptile molds and casts; 8 bird nests and eggs; 7 sketches and miscellaneous material for groups; 1 Eland head (mounted); and 128 bats, 3 species, adults and young. Exploration.

Trost, Henry S., Golden Gate Park Memorial Museum, San Francisco: 1 reprint: Davis, Nevada Footprints. Gift.

University of California, Berkeley, Calif.: 95 specimens of plants collected by Mrs. F. M. Stephens. Gift.

The University of Central Asia, Tashkent, Turkestan: 163 botanical specimens from Asia. Exchange.

Van Duzee, Edward P., California Academy of Sciences: A file of Science from 1918 to 1926; 2 small boxes of land shells. Gift.  
106 insects from Carmel, Calif.; and 5139 insects from Truckee and Reno. Exploration.

Van Dyke, Dr. E. C., University of California, Berkeley, Calif.: 1964 miscellaneous insects; 28 specimens, 9 species of land mollusks; 2 land snails; 2 freshwater shells from Priest Lake, Ida.; 2 specimens, 2 species, freshwater mollusks from Sprague Lake near Ritzville, Washington; 2 land snail shells from Coeur d'Alene Lake, Ida.; miscellaneous insects from Yosemite, Calif.; 3 land shells and 2 salamanders from Alameda County, Calif., 5 from Idaho, and 3 salamanders and 2 frogs from Oregon. Gift.

Van Dyke, Mrs. E. C., 2440 Stuart Street, Berkeley, Calif.: 51 botanical specimens from Oregon. Gift.



Vortriede, William, Capitol Park, Sacramento, Calif.: 41 plants from Camp Sacramento. Gift.

Walther, Eric, San Francisco: 130 exotic plants. Gift.

Werdemann, Dr. E., Botanical Museum, Berlin, Germany: 471 botanical specimens from Chile. Purchase.

Weston, E. Roy, Bakersfield, Calif.: 146 botanical specimens from California. Gift.

Wilder, H. E., Carlotta, Calif.: 1 Marten (*Martes caurina sierræ*); and 1 Lynx (*Lynx fassatus oculus*), skin, skull, and leg bones for mounting, from Humboldt County, Calif. Purchase.

Willett, George, Los Angeles, Calif.: 4 specimens of marine shells. Exchange.

Willett, Mrs. W. M., 2028 Scott Street, San Francisco: 2 birds, *Erythrura prasina*, in flesh, from Java. Gift.

Williams, H. U., University of Buffalo, Buffalo, N. Y.: One separate: Williams, Herbert U., Gross and microscopic anatomy of two Peruvian mummies. Reprinted from the Archives of Pathology and Laboratory Medicine, July 1927, Volume 4, pp. 26-33. Gift.

Woodbury, A. M., Zion National Park, Utah: 3 toads, 2 frogs, 6 lizards, 1 salamander from Zion National Park. Gift.

Worth, Chas. J., 247 Fremont St., San Francisco: 3 glass specimen jars 8" x 24". Gift.

Wright, J. T., c/o American Consul General, Shanghai, China: 3 skins, 1 complete skeleton, and 2 skulls of mammals from Annam; 36 bird skins from Annam. Purchase.

Wright, Mrs. Dora, Shanghai, China: 1426 insects from Annam. Purchase.

Wymore, J. C., University Farm, Davis, Calif.: 36 microlepidoptera from Davis, Calif. Gift.

#### COOPERATION WITH PUBLIC AND PRIVATE SCHOOLS, WITH OTHER INSTITUTIONS AND WITH INDIVIDUALS

Cooperation with schools, institutions and individuals continues, as in the past, through the loan of portable exhibits and study specimens of birds and other natural history objects, and use of library, by means of lectures, and in other ways. De-

tailed records of these activities are in the Museum files. Thirteen portable habitat groups are in constant use in the Berkeley public schools, and several others will soon be available.

VISITORS TO THE MUSEUM IN 1927

The total number of visitors to the Museum in 1927 was 543,014, a number greater than in any previous year except 1924, 1925 and 1926. The average daily attendance was 1488.

The number of visitors by months and years since the opening September 22, 1916, is shown in the following table:

VISITORS TO THE MUSEUM IN 1927												
	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
January.....	.....	23170	25260	17241	27013	25755	19038	15270	32364	34989	26528	33791
February.....	.....	22058	23698	17586	23450	25679	18534	20529	44439	29295	34183	24580
March.....	.....	31606	26810	27397	25419	28279	27922	26341	39935	39168	38677	34624
April.....	.....	32175	23274	25994	32208	24939	36057	21911	41332	40257	36746	38452
May.....	.....	26154	26391	28369	37107	25517	27237	37597	48152	38137	52913	47414
June.....	.....	32123	29843	32248	36207	29406	27131	39511	58281	51775	53799	51630
July.....	.....	37193	31420	48028	52492	43186	36263	64530	91329	69921	83707	84282
August.....	.....	24619	31137	43730	53470	39422	34787	50849	105130	77847	81362	66870
September....	16448	27866	29847	34007	42013	31458	28408	69870	82814	63737	57615	56443
October.....	36933	20629	14743	30463	33500	24861	19459	66894	43074	40418	44654	43520
November..	27718	21810	8531	25246	19347	18593	19080	48766	37611	35634	30420	30581
December....	15002	21693	19588	21188	21340	15062	13339	36707	21572	32245	34555	30827
Total.....	96101	321096	290542	351497	403566	332157	307255	498775	646033	553423	575159	543014
Total since opening of the Museum, 4,918,618.												

SCHOOLS VISITING THE MUSEUM IN 1927

The public and private schools of San Francisco and elsewhere in the state continue to find it worth while to visit the Museum, to view our public exhibits and our reference collections.

Following is a list of the schools, the grades, teachers, number of pupils, and dates of visits, in 1927:

## SCHOOLS OF CITY AND COUNTY OF SAN FRANCISCO

DATE 1927	SCHOOL	GRADE	NUMBER PUPILS	TEACHERS
Jan. 11	State Teachers College.....		13	Lea Reid
Feb. 5	Sts. Peter and Paul.....		15	Bro. F. Parolin
" 17	Gough.....	7-5.....	11	A. M. Alcom
Mar. 5	Camp Fire Group.....		5	Alice G. Parr
" 7	St. Ignatius College.....	College Soph.....	14	George Haley
" 11	Parkside.....	6A-6B.....	72	M. Gleason
" 22	Lowell High.....	High 2nd.....	16	L. M. Elskamp
" 23	John Swett.....	Kindergtn-3rd	58	Misses Murray and Hunt
" 24	Washington Irving.....	5B-6B	57	A. Ringchap and C. Doyle
" 25	Katharine Branson.....	1-2.....	13	Ronalda Bishop
" 25	John Swett.....	1A-2A.....	55	R. Ambrose and T. Deckent
" 25	E. R. Taylor.....	2A.....	24	D. Wilson
" 25	Gough.....	2-4 Primary.....	16	Mrs. Taylor and Mrs. Constantine
" 25	St. Ignatius.....	College Freshmen	12	George Haley
" 29	Guadalupe.....	5A.....	38	Mildred Johnson
April 4	St. Ignatius.....	College Soph.....	14	George Haley
" 6	Guadalupe.....	7A.....	18	H. Roskamp
" 6	Katharine Branson.....	5-6-7.....	12	Miss Stevens
" 6	Commodore Stockton.....	6B.....	81	L. Brovelle and M. Behm
" 6	Le Conte.....	1B.....	28	Miss V. J. Lyon
" 7	Polytechnic High.....	Low 2.....	31	Alice E. Webster
" 7	Prescott.....	3-4-5.....	20	Grace E. Dahlberg
" 7	Ungraded.....	Opportunity.....	21	Josephine Tompkins
" 8	Miss Wafer's.....	Kindergarten 1...	5	Miss Wafer
" 11	Baptist Mission.....	2-3-4.....	24	Miss Parker
" 20	Jefferson.....	4B.....	33	Miss H. Lawrence
" 20	Commodore Stockton.....	Ungraded.....	32	Florence R. McInerney
" 21	St. Joseph Presentation.....	7-8.....	58	Sister M. A. Perpetua
" 21	Polytechnic High.....	10.....	25	G. L. Allen
" 21	St. Joseph.....	8.....	25	J. B. Praught
" 22	Polytechnic High.....	10.....	25	G. L. Allen
" 27	Commodore Stockton.....	5A-4B.....	80	Mrs. Jacobs and Mrs. Barth
" 28	Commodore Stockton.....	4A.....	32	M. Holland
" 28	Commodore Stockton.....	4A.....	36	Ruth H. Peabody
May 6	Roosevelt.....	B.....	26	Mrs. F. J. Hetchens
" 6	Fredric.....	Ungraded.....	15	Miss Painton
" 6	Denman.....	4A.....	30	Miss Z. Meyer
" 6	Sanchez.....	3B.....	35	M. C. Doran
" 6	Emerson.....	3B.....	35	M. McGinness
" 6	Roosevelt.....	2A-2B.....	34	Miss Johnson
" 10	Farragut.....	3B.....	30	M. Doody
" 12	Commodore Stockton.....	5B.....	39	Bertha Ekoos
" 14	Telegraph Hill Settlement.....	Ungraded.....	9	Phyllis H. Meitzler
" 17	Daniel Webster.....	8A.....	30	V. Meline
" 17	Girls' High.....	1B.....	30	Edna M. Reives
" 17	Monroe.....	7A.....	40	D. Greenwood
" 17	St. Paul's.....	4-5-6-7.....	130	Sisters of Charity
" 18	Garfield.....	5B.....	29	A. Leonard
" 18	Columbus.....	Low 6.....	28	Florence Shapero
" 18	Paul Revere.....	2-3B.....	60	Alma Nieber and C. Costa
" 18	Monroe.....	8A.....	32	C. A. Davis

SCHOOLS OF CITY AND COUNTY OF SAN FRANCISCO—*Continued*

DATE 1927	SCHOOL	GRADE	NUMBER PUPILS	TEACHERS
May 19	Commodore Stockton.....	6A-6B.....	63	H. F. Jamieson and G. M. Morton
" 19	Emerson.....	1.....	31	C. M. Strouse
" 19	Commodore Stockton.....	5A.....	40	B. Schultz
" 23	Lincoln.....	2H.....	19	Mrs. Avery
" 24	Garfield.....	6A.....	24	R. Todd
" 24	Jefferson.....	5.....	31	Marjorie Tobias
" 24	Portola Junior High.....	8B.....	35	J. S. Smith.
" 25	St. Brigid's.....	6-7.....	85	Sisters Seraphica and Isadore
" 25	Monroe.....	5A-B-6A.....	120	A. Donohue, M. Brey and A. Clancy
" 26	Most Holy Redeemer.....	7.....	8	Sister Mary Therese
" 26	Excelsior.....	4A-4B.....	75	Misses O'Shaughessy and Bryant
" 26	Daniel Webster.....	5A-B.....	81	Mabel J. Ludwig
" 26	St. Jeanne d'Arc.....	4-8.....	30	Sisters of St. Joseph
" 26	Hearst.....	8B.....	37	Mrs. Gibson
" 27	La Grange.....	Kindergarten1-2-3	12	E. Robinson
" 27	Monroe.....	5-B.....	38	Miss Davini
" 27	Monroe Grammar.....	5A.....	37	Mrs. E. Heckman
" 31	Fremont.....	3.....	31	M. Stambuck
June 1	Jean Parker.....	4B.....	34	Dorothy Parker
" 1	Jean Parker.....	4-5-6B.....	100	Misses Titus, Parker and Mrs. Valsangiacomo
" 1	Jean Parker.....	2-3A.....	44	T. Casey and M. C. Donnelly
" 3	Visitacion Valley.....	Kindergarten 1A.	38	Mrs. Talbot and Miss Vetriola
" 3	Visitacion Valley.....	2A-1-2B.....	78	Misses Mack, O'Neill and Girod
" 3	Jean Parker.....	1-2.....	100	E. McDonnell
" 8	Junipero Serra.....	3A.....	26	V. Lemmerman
" 9	Patrick Henry.....	4A-4B.....	56	Misses Larson and Shillington
" 9	Parkside.....	3A.....	33	M. Byrnes
" 9	Farragut.....	7A.....	38	S. E. Harris
" 10	Pixley Memorial Free Kindergarten.	Kindergarten....	6	Mme. M. L. Plisé
" 10	Visitacion Valley.....	8A-7B.....	30	S. Miller
" 10	Washington.....	6B.....	29	Madeline Murray
" 10	Visitacion Valley.....	6B.....	33	Miss M. A. Kelly
" 10	Polytechnic High.....	Low 2 Biology...	25	L. T. McGlynn
" 10	Patrick Henry.....	5A.....	26	A. M. Bryant
" 14	Andrew Jackson.....	A-B6.....	58	A. Howard and H. Hefron
" 14	Junipero Serra.....	3B.....	25	Sophie Peterson
" 14	Junipero Serra.....	1B.....	30	Edith King
" 14	Junipero Serra.....	1B.....	37	P. D. Worzek
" 14	Pacific Heights.....	5B.....	43	Miss Dreyfus
" 14	Junipero Serra.....	Kindergarten....	23	M. O'Connor
" 15	Sea Cliff Kindergarten.....	Kindergarten....	5	Miss Gurohn
" 15	E. R. Taylor.....	.....	8	M. Eddie
" 16	S. S. F. Elementary.....	Low 4.....	12	Miss E. Brower
" 16	Lawrence.....	8.....	22	Minnie B. Edwards
" 20	Telegraph Hill Settlement.....	Sewing.....	23	Miss H. Anery
July 12	State Teachers College.....	.....	24	Lea Reid
" 14	State Teachers College.....	.....	22	Lea Reid
Sept. 14	Sarah B. Cooper.....	1B.....	22	J. Linsey
" 23	John Swett Junior High.....	8.....	23	Miss K. Horgan
" 30	St. Ignatius.....	Freshman.....	37	George Haley



SCHOOLS OF CITY AND COUNTY OF SAN FRANCISCO—*Continued*

DATE 1927	SCHOOL	GRADE	NUMBER PUPILS	TEACHERS
Oct. 4	Polytechnic High.....	High 2.....	25	A. Webster
" 5	Polytechnic High.....	High 2 Biology...	14	A. Webster
" 5	Argonne.....	1A.....	34	E. L. Woelffel
" 5	Argonne.....	1A.....	33	Miss A. O'Connor
" 5	Anderson.....	1B.....	36	L. Andersen
" 5	Argonne.....	Kindergarten...	45	G. Shea
" 6	Kiddie Kastle.....	Kindergarten...	20	Miss Rosenthal
" 7	Miss Ransom's.....	5-6.....	18	Regala Bernays
" 13	Sherman.....	5A.....	32	M. Denny
" 17	Grant.....	8A.....	28	F. Torassa
" 18	St. Ignatius.....	College Soph....	12	George Haley
" 19	Patrick Henry.....	1.....	70	H. B. Crocker and D. Widke
Nov. 4	Commodore Stockton.....	Ungraded.....	39	A. Barter
" 10	Monroe.....	8B.....	32	C. A. Davis
" 16	Cleveland.....	5B.....	30	H. Stewart
" 16	Cleveland.....	7B.....	23	L. Schemp
" 28	State Teachers College.....	.....	26	L. Reid
Dec. 1	Cogswell High.....	Seniors.....	6	Miss Newton
" 14	Moulder.....	Ungraded.....	11	Miss L. M. Kennedy

## SCHOOLS OUTSIDE OF SAN FRANCISCO

Mar. 5	University of California.....	.....	26	Prof. J. Grinnell
" 19	Livermore.....	7-8.....	48	A. W. Dutcher
" 28	Lincoln, Berkeley.....	High 6.....	32	H. Burroughs
" 29	Franklin, Berkeley.....	High 5.....	29	Amy Oakley
" 30	Columbus, Berkeley.....	5.....	45	E. Bell and L. Bancroft
April 1	University of California.....	Zoology.....	14	Tracy I. Storer
" 20	San Anselmo.....	4-5.....	30	Edyth D. Walker
May 10	Columbus, Berkeley.....	2-3.....	98	M. Sterne, M. Osborne and E. Abernathy
" 10	Columbus, Berkeley.....	2.....	29	H. Rogers
" 12	Jefferson, Colma.....	4.....	25	H. Madonna
" 14	Roosevelt Junior High, Richmond..	High 8.....	20	M. Vaughn
June 1	San Jose High.....	.....	100	J. H. Barker and Miss Judkins
" 1	San Jose High.....	.....	90	Miss Duthie and Miss Bland
" 1	San Pedro.....	1-8.....	17	Miss Crosby
" 9	Marin Garfield.....	All grades.....	9	Mrs. H. M. Pillars
" 10	Alvarado.....	6B.....	36	M. J. MacKinnon
" 20	Nom Kue.....	3.....	35	Lai Ching
Sept. 24	Garfield Junior High, Berkeley.....	Low 9.....	17	Mrs. M. B. Brennan
" 29	Dewey, Oakland.....	Atypical.....	13	D. B. Thomas
Oct. 14	Lincoln, Berkeley.....	5.....	30	M. Moffett
" 15	Hayward Gr.....	High 8.....	14	Mrs. Whitehead
" 22	University of California.....	Zoology.....	26	Joseph Dixon
" 29	Sacramento Junior College.....	Freshmen.....	44	A. W. Bell
" 29	Modesto Junior College.....	.....	32	Woodworth
Nov. 4	University High, Oakland.....	10-11 Biology...	100	J. M. Nelson and Leila Gibson
" 12	Auburn-New Castle.....	Grammar.....	40	T. Wakabayashi
" 19	University of California.....	Zoology.....	20	S. F. Light
" 28	Jap. Pac. School, Sacramento.....	.....	9	Rev. K. Muraoka
" 29	Washington, Alameda.....	High 8.....	30	I. Kane
Dec. 6	Washington, Alameda.....	6.....	31	Jessie L. Cundall

## SUMMARY

*Schools of San Francisco:*

Total Number of Pupils.....	4131	4131
Total Number of Teachers.....	141	
Total Number of Classes.....	154	

*Schools Outside of San Francisco:*

Total Number of Pupils.....	1074	1074
Total Number of Teachers.....	36	
Total Number of Classes.....	34	
		<hr/>
		5205

USE OF THE LIBRARY AND RESEARCH COLLECTIONS  
BY INVESTIGATORS AND STUDENTS

Greater use is being made each succeeding year of our Library and research collections by investigators and students. The Academy Library is becoming more and more valuable every year, not only to specialists who find in it technical publications, particularly of learned societies, to which they have not easy access elsewhere, but the general public find in it many works of reference which they wish to consult. On the Library reading tables are kept many of the current publications of learned societies throughout the world, also many of the current scientific journals, nature and outing magazines, and recent popular nature books. Members of the Academy are invited to visit the Library and avail themselves of the facilities which it affords for securing information along these and other lines in which they are interested.

## STEINHART AQUARIUM

The activities of the Aquarium for 1927 are fully set forth in the report of the Superintendent.

It continues to be one of the greatest attractions of San Francisco. Visitors to California from other states and from foreign countries rarely fail to include the Steinhart Aquarium

among the places of special interest which they visit. Scarcely a day passes that some one does not come to the office to express his appreciation of the excellence of the exhibits and the cleanliness and generally attractive appearance of the Aquarium. The employees of the Aquarium without exception deserve high praise for the splendid condition in which the exhibits and all parts of the Aquarium are maintained.

Following is a record by months and years of the number of visitors to the Aquarium since the opening, September 29, 1923:

*Visitors to Steinhart Aquarium*

	1923	1924	1925	1926	1927
January.....		82,283	72,153	38,259	44,300
February.....		119,001	61,213	66,032	39,515
March.....		88,172	97,986	82,153	58,151
April.....		83,245	79,021	64,830	65,337
May.....		97,083	75,187	94,521	87,961
June.....		112,785	94,717	91,451	70,151
July.....		145,703	128,261	127,999	142,738
August.....		148,899	144,208	124,635	115,230
September.....	29,800	116,032	106,492	86,645	87,909
October.....	209,671	71,273	72,350	79,108	66,117
November.....	145,434	67,500	59,074	49,741	44,643
December.....	96,757	48,376	52,929	48,423	43,582
Totals.....	481,662	1,180,352	1,043,591	953,797	865,634

SCHOOLS VISITING THE STEINHART AQUARIUM IN 1927

That the Steinhart Aquarium is proving of interest and real educational value to the schools is evidenced by the great number of pupils, classes, and teachers that visit it annually.

Following is a list of the schools with names of teachers and number of pupils:

## SCHOOLS VISITING STEINHART AQUARIUM IN 1927

DATE 1927	SCHOOL	GRADE	NUMBER PUPILS	TEACHERS
Jan. 13	Patrick Henry.....	3A-2B.....	31	R. Lyon
" 18	Lowell High.....	High 2.....	48	L. M. Elskamp
" 19	Alvarado.....	Kindergarten....	30	M. Adams
Feb. 15	Sts. Peter and Paul.....	5.....	16	Bro. Cambin
" 17	Gough.....	5-7.....	11	A. M. Alcorn
Mar. 13	Girls High.....	1A-Biology.....	30	Edna M. Reeves
" 14	State Teachers College.....	Biology.....	40	L. Reid
" 15	Hamilton Junior High.....	Low 8.....	12	Miss Puter
" 22	Lowell High.....	High 2.....	16	L. M. Elskamp
" 22	John Swett.....	3A-Kindergarten.	50	Miss Hunt, C. R. Murray
" 24	Polytechnic High.....	Low 2.....	16	H. L. Movin
" 24	Washington Irving.....	6B-5B.....	57	A. Ringchop, C. Doyle
" 25	Taylor.....	2A.....	24	D. Wilson
" 25	John Swett.....	1-2.....	50	Mrs. Dechent and Miss Ambrose
April 4	Polytechnic High.....	9.....	25	G. L. Allen
" 5	Guadalupe.....	6B.....	34	R. L. Pechart
" 6	Commodore Stockton.....	6B.....	40	L. Brovelti
" 6	LeConte.....	1B.....	28	Miss Vera J. Lyon
" 6	Commodore Stockton.....	6B.....	41	Miss M. Behm
" 7	Ungraded.....	Opportunity Class	22	Josephine Hopkins
" 7	Polytechnic High.....	Low 2.....	31	Alice E. Webster
" 8	Polytechnic High.....	Freshmen.....	32	E. Stockton
" 9	Polytechnic High.....	10.....	25	G. L. Allen
" 10	Chinese Baptist Mission.....	.....	24	Myrtle R. Parker
" 18	St. Anthony's.....	5.....	17	Sister M. Bertranda
" 20	Polytechnic High.....	10.....	25	G. L. Allen
" 20	Extension.....	.....	18	Miss Reed
" 21	St. Joseph's.....	8.....	25	J. B. Praught
" 21	Patrick Henry.....	Kindergarten....	28	Dorothy A. Rathgen
" 22	Sherman.....	4B.....	33	E. A. Shipaugh
" 22	Polytechnic High.....	Low 2-Biology...	19	R. L. McGlynn
" 23	San Francisco Boys' Club.....	.....	26	A. Fest
" 26	Paul Revere.....	Kindergarten....	29	Eloisa George
" 27	Commodore Stockton.....	5A-4B.....	41	Mrs. H. Jacobs
" 28	Commodore Stockton.....	4A.....	32	M. Holland
" 28	Commodore Stockton.....	4A.....	36	Ruth H. Peabody
" 29	Polytechnic High.....	Low 2 Biology...	20	R. L. McGlynn
" 29	Polytechnic High.....	Low 2 Biology...	21	R. L. McGlynn
May 1	Ellen Stark Ford.....	Kindergarten....	10	Martha L. Shaw
" 2	Garfield.....	3B.....	4	Miss Kamper
" 5	Fredric Burk.....	Ungraded.....	15	Miss Painton
" 5	Sanchez.....	3B.....	35	M. E. Doran
" 6	Denman.....	4A.....	29	Z. M. Meyer
" 6	Emerson.....	3B.....	35	M. McGinness
" 9	St. Ignatius College.....	Sophomore.....	17	George Haley
" 10	Farragut.....	3B.....	30	M. Doody



SCHOOLS VISITING STEINHART AQUARIUM IN 1927—*Continued*

DATE 1927	SCHOOL	GRADE	NUMBER PUPILS	TEACHERS
May 10	Balboa.....	4A-4B.....	20	Edna Coffey
" 12	Jefferson.....	7A.....	36	Ora A. Duncan
" 12	Polytechnic High.....	Low 2 Biology...	15	E. Koehler
" 12	Polytechnic High.....	Secondary.....	50	E. Koehler
" 13	Commodore Stockton.....	5A.....	40	B. Schultz
" 13	St. Paul's.....	4-5.....	95	Sisters Mary Basilissa and Mary Rembert
" 16	St. Peter's.....	4.....	43	Sister M. Edward
" 16	Garfield.....	3B.....	52	A. McLaughlin
" 17	St. Paul's.....	7-6-5-4.....	130	Sisters of Charity, B. V. M.
" 17	Lowell High.....	Sophomore.....	150	Louis J. Henvich
" 17	Daniel Webster.....	8A.....	32	V. Meline
" 18	Paul Revere.....	2B-3B.....	25	Alma Niebur
" 18	Andrew Jackson.....	Kindergarten 1...	56	Miss Nelson and Mrs. Schmidt
" 18	Paul Revere.....	2B.....	35	Claire Costa
" 18	Monroe.....	8A.....	32	C. A. Davis
" 18	Polytechnic High.....	Low 2 Biology...	18	H. L. Movin
" 19	Commodore Stockton.....	6A.....	30	G. Morton
" 19	Denman.....	7A.....	28	P. E. Bernstein
" 19	Commodore Stockton.....	6A.....	33	H. F. Jameson
" 20	Monroe.....	B7-A8.....	100	Mrs. Wanz, Mrs. Sinclair, Miss Stern
" 20	John Swett.....	3A-3B.....	55	D. Sullivan, C. R. Murray
" 21	St. Rose Academy.....	1st Year High....	27	Sister Rosaria
" 24	Garfield.....	6A.....	24	R. Todd
" 25	St. Brigid's.....	7-6.....	85	Sisters M. Seraphica and S. M. Isadore
" 25	Polytechnic High.....	Low 2 Biology...	21	H. L. Movin
" 25	Monroe.....	5A-5B-6A.....	120	A. Donohen, M. Bray, A. Clancy
" 26	Daniel Webster.....	5A-5B.....	81	L. E. Lindh and M. J. Ludwig
" 26	Excelsior.....	4B-4A.....	75	M. O'Shaughanessy, E. M. Bryan
" 26	Ste. Jeanne d'Arc.....	5.....	12	Sister of St. Joseph
" 26	Most Holy Redeemer.....	7.....	8	S. M. Ann Therese
" 27	Monroe.....	5B.....	38	Miss Davim
" 27	Monroe Grammar.....	5A.....	37	Mrs. L. E. Heckman
" 27	Polytechnic High.....	High 1.....	62	M. S. Jussel
" 27	Polytechnic High.....	Low 2 Biology...	28	H. L. Movin
" 31	Fremont.....	3.....	31	M. Stambuck
" 31	Polytechnic High.....	.....	25	H. J. Wilcox
June 1	Jean Parker.....	4B.....	34	D. J. Parker
" 1	Jean Parker.....	5B-6B.....	60	
" 2	Polytechnic High.....	.....	21	H. J. Wilcox
" 2	Jean Parker.....	3A-2A.....	44	M. C. Donnelly, T. A. Cosey
" 3	Jean Parker.....	1-2.....	100	E. McDonnell
" 3	Glen Park.....	7A.....	40	E. Collier
" 3	Frank McCoppin.....	Kindergarten....	20	Louis Harden

SCHOOLS VISITING STEINHART AQUARIUM IN 1927—*Continued*

DATE 1927	SCHOOL	GRADE	NUMBER PUPILS	TEACHERS
June 6	Star of Sea.....	7-8.....	100	
" 6	Paul Revere.....	2A.....	27	E. O. Keeffe
" 8	Junipero Serra.....	3A.....	26	V. Lemmerman
" 9	Farragut.....	7A.....	28	S. E. Harris
" 9	Parkside.....	3A.....	33	Margaret Byrnes
" 9	Patrick Henry.....	4A-4B.....	56	K. Shillington and B. Larson
" 9	Polytechnic High.....		26	H. J. Wilcox
" 10	Alvarado.....	6B.....	36	May J. MacKinnon
" 10	Washington.....	6B.....	29	Madeline Murray
" 10	Jean Parker.....	6.....	29	D. Farrell
" 13	R. S. Thornton.....	2-3-4.....	21	Margaret P. Henderson
" 14	Commodore Sloat.....	B5.....	38	M. d'Erlach
" 14	Junipero Serra.....	1A.....	34	J. Crouse
" 14	Junipero Serra.....	1B.....	30	Edith King
" 14	Pacific Heights.....	5B.....	43	Miss Dreyfus
" 14	Junipero Serra.....	3B.....	25	Sophia Peterson
" 14	Junipero Serra.....	Kindergarten....	23	M. O'Connor
" 14	Andrew Jackson.....	A-B6.....	58	H. Hefron, A. Howard
" 15	Jefferson.....	2.....	33	K. Lickens
" 15	E. R. Taylor.....		8	M. L. Eddie
" 16	Francis Scott Key.....	4A.....	36	L. Fenn
" 16	Lawrence.....	8.....	22	Munnie B. Edwards
" 16	Pixley Memorial.....	Kindergarten....	7	Mme. Marie Ligh Plisg
" 20	Nom Kae.....	3.....	35	Lai Ching
" 20	Telegraph Hill Settlement.....	Sewing Class....	23	Miss H. Avery
" 30	Junipero Serra.....	1B.....	30	P. A. Dworzek
Aug. 9	Sts. Peter and Paul.....		60	Sister of Holy Family
" 29	Frank McCoppin.....	2A.....	32	Miss Lewis
Sept. 1	Frank McCoppin.....	Kindergarten....	30	Miss Frances
" 14	Sarah B. Cooper.....	1B.....	22	J. Linsey
" 23	John Swett Junior High.....	8.....	23	Miss K. Horgan
" 24	Stewart Memorial Sabbath.....		11	Mrs. J. M. Dodd
Oct. 4	Polytechnic High.....	High 2.....	25	A. E. Webster
" 5	Argonne.....	1A.....	35	E. L. Woelffel
" 5	Argonne.....	Kindergarten....	45	Gertrude Shea
" 5	Polytechnic High.....	High 2 Biology...	14	A. E. Webster
" 5	Argonne.....	1A.....	33	Miss A. O'Connor
" 5	Argonne.....	1B.....	36	L. Andersen
" 6	Kiddie Kastle.....	Kindergarten....	20	Miss Rosenthal
" 10	Sherman.....	4A.....	31	E. A. Shipaugh
" 13	Sherman.....	5A.....	32	M. Denny
" 15	Hayward Grammar.....	High 8.....	15	Mrs. Whitehead
" 17	Grant.....	8A.....	28	F. Torassa
" 17	State Teachers College.....		27	L. Reid
" 19	Patrick Henry.....	1st Grade.....	70	H. B. Cricker and D. Widber
" 21	Polytechnic High.....		23	H. J. Wilcox

SCHOOLS VISITING STEINHART AQUARIUM IN 1927—*Continued*

DATE 1927	SCHOOL	GRADE	NUMBER PUPILS	TEACHERS
Oct. 24	Polytechnic High.....		15	H. J. Wilcox
" 25	Polytechnic High.....		27	H. J. Wilcox
" 27	Emerson.....	3B.....	15	M. Collier
" 31	State Teachers College.....		26	L. Reid
Nov. 3	Monroe.....	8A.....	41	E. O'Flaherty and E. Curtiss
" 4	Commodore Stockton.....	Ungraded.....	39	A. Barter
" 8	Lowell High.....		20	Louis J. Henvich
" 10	Commodore Stockton.....	Ungraded.....	32	Florence R. McInerney
" 10	Monroe.....	8B.....	32	C. A. Davis
" 16	Cleveland.....	5B.....	30	H. Stewart
" 16	Cleveland.....	7B.....	23	S. Schemp
" 18	Commodore Stockton.....	4A-4B.....	80	R. H. Peabody and B. Ekoos
" 21	College Holy James.....	Freshmen-Soph...	9	Sister Mary Reginalda
" 14	Moulder.....	Ungraded.....	11	Miss M. L. Kennedy

## SCHOOLS OUTSIDE OF SAN FRANCISCO

DATE 1927	SCHOOL	GRADE	NUMBER PUPILS	TEACHERS
Jan. 11	Miss Ransom's.....	7A.....	13	Mrs. Demeton
" 13	Home School.....	High School.....	7	Miss F. B. Stanton
" 13	Fruitvale, Oakland.....	7-8.....	150	A. G. Coffey
" 20	Visitacion Valley.....	4B-5A.....	30	H. Bielenberg
Feb. 1	Jefferson, Colma.....	8.....	24	Miss Traynor
" 4	Mayfield.....	8A.....	9	E. M. Knight
Mar. 5	University of California.....	Zoology 113.....	27	Prof. J. Grinnell
" 5	Stanford University.....		10	Prof. E. C. Starks
" 24	Buena Vista.....	Special.....	11	A. M. Jones
" 28	Lincoln, Berkeley.....	High 6.....	32	H. Burroughs
" 29	Franklin, Berkeley.....	High 5.....	29	Amy Oakley
" 30	Columbus, Berkeley.....	5.....	45	L. Bancroft, E. Bell
April 1	Branch College of Agriculture, University of California, Davis...	1A Zoology.....	14	Prof. Tracy I. Storer
" 4	Columbus, Berkeley.....	4.....	63	M. S. Suenderman, A. L. Fisher, S. J. Irwin, Principal
" 7	Prescott Junior High, Oakland.....	Special Class.....	20	Grace Dahlberg
" 20	San Anselmo, Marin Co.....	High 4-5.....	30	Miss Edythe Walker
" 22	St. Joseph's Convent, Berkeley.....	7-8 Girls.....	58	Sister M. A. Perpetua
" 22	Stanford University.....	Premed. Students.	20	
" 23	Petaluma Boy Scouts.....		12	H. Stein
May 5	McKinley, Berkeley.....	Low 5-High 5....	30	Elizabeth Harcourt
" 10	Columbus, Berkeley.....	2-3.....	127	H. Rogers, E. Abernethy, M. Os- borne, M. Sterne, Sue J. Irwin, Principal

SCHOOLS OUTSIDE OF SAN FRANCISCO—*Continued*

DATE 1927	SCHOOL	GRADE	NUMBER PUPILS	TEACHERS
May 11	Elmhurst.....	Low 5.....	100	H. Hobson
" 12	Jefferson, Colma.....	4th.....	25	Hazel Madonna
" 14	Moss Beach.....	1-8.....	28	Miss L. Dawson
" 14	University High, Berkeley.....	High 7.....	4	Minnie Alduit
" 14	St. Vincent's High, Vallejo.....	.....	10	Sister M. Aloysius
" 18	Milton Institute.....	Mixed.....	8	Emily Sano
" 18	Columbus, Berkeley.....	Low 5-High 5- Low 6.....	56	Eva Blumb, Florence Shapero
" 20	Martinez.....	Boy Scouts.....	93	
" 20	McKinley, Berkeley.....	Low 3-High 3....	23	Margaret V. Huss
" 21	St. Joseph's Institute.....	.....	28	Sister of St. Joseph
" 23	Lincoln, Berkeley.....	High 2.....	19	Margaret Avery
" 24	Jefferson, Colma.....	5.....	31	Marjorie H. Tobias
" 27	Knightsen, Contra Costa Co.....	6-7-8.....	19	J. M. Bonnickson
June 1	San Pedro.....	1-8.....	17	Miss Crosby
" 1	San Jose High.....	Sophomore.....	200	J. H. Barker
" 3	Visitacion Valley.....	1B-2A-2B.....	75	Am. M. Mack, V. Girod, M. O'Neill
" 9	Elmhurst Junior High, Oakland....	High 7.....	14	Alice M. Andersen
" 10	Visitacion Valley.....	6B.....	33	Miss N. A. Kelly
" 10	Visitacion Valley.....	7B-8H.....	30	J. Miller
" 13	Millbrae.....	1-8.....	30	Florence Schroter
" 13	Emerson, Oakland.....	Special Class....	13	M. Rowa
" 16	South San Francisco Grammar.....	Low 4.....	12	Miss E. Broner
" 23	University of California.....	Zoology-1A.....	30	S. F. Light
" 23	DeFremery, Oakland.....	.....	10	Margaret Withington
" 29	Dewey, Oakland.....	Atypical.....	13	D. B. Thomas
Sept. 24	Garfield Junior High, Berkeley....	Low 9.....	17	M. B. Brennon
Oct. 4	Washington, Berkeley.....	High 6.....	25	Mrs. Haley
" 7	Miss Ransom's.....	5-6.....	18	Regula H. Bernays, Frances Birtch
" 13	Lincoln, Berkeley.....	5.....	30	M. Moffett
" 29	Modesto Junior College.....	.....	32	Woodworth
Nov. 4	University High.....	10-11.....	95	L. Gibson, J. M. Nelson
" 11	Woodrow Wilson.....	7.....	30	Mrs. Nellie L. Raper
" 12	New Castle and Auburn Grammar..	3-6.....	40	T. Wakabayashi
" 19	University California.....	Zoology-1A.....	20	S. F. Light
" 25	Mt. St. Joseph's.....	6-7-8.....	76	Sister Ambrose
" 28	Pacific School, Sacramento, and Japanese Language School.....	.....	9	Rev. K. Muraoka
" 29	Washington, Alameda.....	A8.....	30	Miss Kone
Dec. 6	Washington, Alameda.....	6.....	31	Jessie L. Cundall
" 28	Concord Grammar.....	7-8.....	11	Guardian Adeline Laughlin



## SUMMARY

*Schools of San Francisco:*

Number of Visiting Pupils.....	5214
Number of Visiting Teachers.....	169
Number of Visiting Classes.....	177

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*Schools Outside of San Francisco:*

Number of Visiting Pupils.....	2146
Number of Visiting Teachers.....	69
Number of Visiting Classes.....	78

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Total Number of Pupils.....	7360
Total Number of Teachers.....	238
Total Number of Classes.....	255

## DEPARTMENT ACTIVITIES

The activities of each of the various departments of the Museum during the year 1927 have not lagged behind those of previous years. The usual attention has been given to accessioning, arranging and care of the research collections, each of which has grown steadily from donations and purchase and through the field activities of the curators and their assistants. Full details will be found in the various departmental reports. Only brief summaries need be given here.

*Department of Botany.*—As in 1926, Miss Eastwood made a number of short collecting trips to certain parts of the state for the purpose of securing specimens to fill gaps in the Herbarium, of clearing up doubtful matters in geographic distribution, and in making life-history studies of certain species. The Herbarium grew greatly in the year, by purchase, gift, and exchange, and from exploration. Perhaps the most valuable collection resulting from field work of the year was that obtained on Nunivak Island and elsewhere in Alaska by Mr. C. G. Harrold and Prof. George Haley.

According to the Curator's report, the Herbarium now contains 151,501 sheets of mounted specimens, an increase of 7935 during the year.

*Department of Entomology.*—The Curator, Mr. Edward P. Van Duzee, reports that the principal work of his department

during the year was curatorial in character,—sorting, labelling, arranging, and caring for specimens already on hand and needing attention, including several large collections recently received, notably the Van Dyke and Koebele collections. Another notable donation made to the department within the year was the collection of beetles by Mr. Louis S. Slevin of Carmel. This collection numbers about 25,000 specimens, and contains many rare and interesting species.

*Department of Exhibits.*—Mr. Frank Tose, Chief of Exhibits, has been busy during the year with the various duties and activities that usually have to be attended to by the taxidermists, preparators, and artists of a small museum such as ours. As an illustration, the Museum receives each year as donations from Superintendent McLaren a considerable number of birds and mammals that have died in Golden Gate Park. As these are received in the flesh, they require immediate attention, as we usually find them worth saving. All this takes a good deal of the time of the department. The preparation of habitat groups continued, and now every available space in the Museum has been filled. The last groups to be installed are the *Bat* group and the *California Gray Squirrel* group, two unique and very attractive exhibits.

In addition to the regular work of the department, Mr. Tose, assisted by Mr. Slevin, installed a very creditable exhibit at the Pacific Foreign Trade and Travel Exposition held in the City Auditorium, in September. This exhibit is fully described in Mr. Tose's report.

*Department of Fishes.*—During the first eight months of the year 1927, the assistant curator devoted most of his time to the completion of the manuscript for a revised Check-List of Fishes and Fish-like Vertebrates of North and Middle America, upon which Dr. David Starr Jordan and the curator have been engaged from time to time for many years as their other more pressing duties would permit. This monumental work, including indexes to both scientific and vernacular names, was completed and sent to the Bureau of Fisheries at Washington in August, 1927, by which it has been accepted for publication.

The reference series of fishes which the department is building up for the use of the Aquarium, anglers, and others interested in fishes, is growing rapidly. This is being added to from time to time, the additions coming chiefly from the Aquarium and from field parties sent out by the Academy and the Aquarium. Most important among these is the very large collection made in 1925 by the Academy's expedition to the Revillagigedo and the Tres Marias islands.

*Department of Herpetology.*—Mr. Joseph R. Slevin, Assistant Curator of this department, was active throughout the year chiefly in curatorial work such as recording, labelling, card-cataloguing, and caring for the recent accessions, particularly the amphibians.

The exhibit made by the Departments of Exhibits and Herpetology at the Pacific Foreign Trade and Travel Exposition has already been mentioned.

In April and May Mr. Slevin spent some time in San Diego County where a considerable collection of reptiles was obtained, some of the species obtained being rare.

Perhaps the most important single event in the department's activities in the year was a trip made by Mr. Slevin and Mr. Tose to the Galapagos Islands in November and December on the *SS. Oaxaca* as guests of Captain G. Allan Hancock, for the purpose of securing accessory materials for certain habitat groups which the Academy proposes to instal, including one each of the large Land Iguana (*Conolophus subcristatus*), the Aquatic Iguana (*Amblyrhynchus cristatus*), and a species of gigantic tortoise.

In addition to securing materials for these groups, they had opportunity to do some general collecting. For the Department of Ornithology they secured a good series of the Flightless Cormorant (*Nannopterum harrisi*), for the Department of Herpetology a good series of the Land Iguana and the Aquatic Iguana.

Perhaps the event of most scientific importance to the Department of Herpetology, certainly the most spectacular, was the securing on Malpelo Island off the coast of Colombia, not only of a fine series of 27 specimens of Agassiz's Lizard, *Anolis agassizii* Stejneger, previously known only from four specimens taken on this island in 1891 by Charles H. Town-

send, but 10 specimens of another species of lizard entirely new to science, which Mr. Slevin will soon<sup>1</sup> describe in these Proceedings.

Malpelo Island is a small rock projecting above the water like a castle, landing upon which is next to impossible. Dr. Townsend secured his four specimens by shooting them from the face of the cliff and picking them up from the water as they fell near the boat from which he was unable to make a landing.

Though the sea was quite rough and the shore in most places nearly perpendicular, Mr. Slevin succeeded in making a landing, the first ever made upon the island by any human being so far as known.

*Invertebrate Zoology.*—The Curator has not been able to devote any time to this department in the past year further than to care for the collections already on hand. It is hoped that we may soon have suitable rooms for this department and that funds to place it upon the same basis as the other departments may become available.

*Library.*—The report of the Assistant Librarian, Mr. I. M'Guire, indicates that the growth of the Library during the past year has been the most satisfactory in its history. This has been due first, to the generous allotment of funds made by the Council and Trustees for library purposes, and second, to the careful and intelligent attention to its needs given by Mr. M'Guire, who has been very active in completing our files of the publications of learned societies, calling attention to desirable exchanges and to early scientific reports, books, and pamphlets, listed for sale rarely and only by second-hand book dealers, also in improving the library generally.

Mr. M'Guire in his report calls attention to several of the most urgent needs of the Library. It is hoped these may receive the early attention of the Council.

*Department of Ornithology and Mammalogy.*—The activities of this department are fully set forth by Curator Swarth. The number of accessions to the department has been large and valuable, the majority being from Alaska (Harrold and

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<sup>1</sup> See Proc. Calif. Acad. Sci., Fourth Series, Vol. XVI, No. 21, pp. 681-684, pls. 25 and 26, February 28, 1928.

Haley), Arizona (Swarth, Mailliard, and McLellan), and the valuable gifts by Mrs. Fanny Koebele and Mr. W. M. Giffard.

It is gratifying to know that Mr. Swarth has begun a study of the large collection of land birds obtained by the Academy's Galapagos expedition of 1905-1906.

*Department of Paleontology.*—Valuable collections of Cretaceous and Jurassic fossils were obtained by Messrs. L. G. Hertlein and T. F. Stipp in eastern Mexico, and a large collection of Tertiary and Cretaceous Foraminifera was obtained in the same territory by Mr. C. M. Carson. Messrs. Hertlein and Emmet Rixford, Jr., spent some time on San Miguel, Santa Rosa, and Santa Cruz studying the geology and paleontology of those islands. They secured important collections for the department. These and the many other collections add greatly to the value of the department's research material.

Considerable field work was done by Mr. Hertlein in the vicinity of San Diego, Banning and San Pedro. Dr. Hanna continued to add to the Academy's collection of organic shales, which has now grown to considerable proportions.

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The following bibliography lists the papers published by members of the Museum and Aquarium staffs in 1927.

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#### ACKNOWLEDGMENTS

As in the past, many courtesies of one kind or another have been shown the Academy by many individuals and by various institutions. Although space does not permit specific mention of all, the Academy is grateful to everyone who has shown interest in its work and who has contributed in any way to its success.

First of all must be mentioned those who have contributed to the educational program of the Academy by giving one or more lectures in our Sunday afternoon and Wednesday evening lecture courses. The Academy's grateful thanks are also due to each of those who have donated specimens or books to the Museum or the Aquarium.

The Southern Pacific Company, the Atchison, Topeka, and Santa Fe Railway System, the Matson Navigation Company, and the Los Angeles Steamship Company, have each continued to take a deep interest in the scientific and educational activities of the Academy. Each of these great companies has extended many courtesies to the Academy and to members of its staff in connection with the field work of the Museum and the Aquarium. As a result of their cooperation the Academy's exhibits and its research work on the Coast have been greatly advanced and the Museum's study collections materially increased. The exhibits of tropical and southern California fishes have been maintained in excellent condition through the kindly cooperation of the Matson Navigation Company and the Los Angeles Steamship Company.

The Academy is under great obligation to Captain G. Allan Hancock of Los Angeles for his kindness in permitting Mr. Joseph R. Slevin and Mr. Frank Tose of the Museum staff to make a trip to the Galapagos Islands as his guests on the *Oaxaca*, thus affording them the opportunity to secure many valuable specimens for the Museum and the Aquarium.

The Academy's thanks are also due Mr. L. M. Klauber of San Diego, for many courtesies extended to the Department of Herpetology.

## DEPARTMENT REPORTS

### DEPARTMENT OF BOTANY

The Herbarium now numbers 151,501 sheets of mounted specimens, an increase of 7,935 during the year. There are, besides, many duplicates, and the entire collection from the Revillagigedo Islands which is still in the possession of the collector, H. N. Mason, whose report has not yet been submitted. The other specimens from the Academy's 1925 Expedition have been determined by the curator with the exception of those from the Tres Marias Islands. A duplicate set of these was sent to the National Herbarium and the specimens were named by Dr. Paul C. Standley, an authority on Mexican plants. He also verified my determinations and the lists are now ready for publication.

Several short excursions were made by the curator. As the guest of Mrs. Charles Derby of San Jose, collections were made about Pacheco Pass and Los Baños.

A walking trip was made in Eldorado County from Placerville to Georgetown via Coloma and back via Kelsey. One day was spent at Winters, Yuba County, and one day at Byron Springs. Two short trips were made to San



Luis Obispo County and exploration was made possible over a great part of the county through the help of Mr. Irving Sinsheimer and Miss Gertrude Sinsheimer. One week was spent near Greenville, Plumas County, as the guest of Mr. and Mrs. Harry West of Forest Lodge. On the trip to Reno to attend the meeting of the Pacific Division of the American Association for the Advancement of Science, excursions were made to Pyramid Lake, Virginia City and Carson; also to the Plumas Forest Reserve via Chilcoot Pass. The hospitality and help which the members of the faculty of the University of Nevada gave is gratefully acknowledged.

Professor George Haley made further explorations in Alaska, collecting specimens in many places where the vessel stopped. On Nunivak Island where his stay was short his collection was supplemented by 74 specimens obtained there by Mr. C. G. Harrold. The total number of specimens obtained was over 300. The Academy now has an excellent representation of Alaskan and Arctic plants. Mr. Haley also collected in Nevada and Sierra counties, California, and donated a collection of about 100 specimens to the herbarium.

The Academy's expedition of 1925 to islands off the Mexican coast resulted in the addition of 65 species from Magdalena Bay, 19 from San Quintin Bay, 24 from Turtle Bay, 13 from San Martin Island, 63 from Cedros Island, 45 from Guadalupe Island, 16 from Cape San Lucas and 120 from Tres Marias Islands. Duplicates of these have been distributed to the leading botanical centers and some are still on hand. Eight genera and 98 species were added, many of them being topotypes.

The following collections were received in exchange: 75 New England plants from the Gray Herbarium, Cambridge, Mass.; 163 Asia Minor plants from the University of Asiae Mediae, Tashkent, Turkestan, adding 15 genera and 131 species; 805 duplicates from the Jones Herbarium sent from Pomona College, Claremont, Calif., adding 80 species and several genera; 139 ferns and fern allies from the National Herbarium, Washington, D. C.; 13 Nebraska plants from Dr. H. Hapeman, all new to our herbarium.

The following collections were sent to correspondents in exchange: 25 to Dr. H. Hapeman; 365 to the U. S. National Herbarium; 319 to the Royal Herbarium, Kew, England; 184 to the Gray Herbarium; 300 to the University of Asiae Mediae; 184 to Pomona College; 52 woody plants to the Arnold Arboretum, Jamaica Plain, Mass.; 52 to Dr. S. F. Blake, Bureau of Plant Industry, Washington, D. C.

The following collections were purchased: 311 mosses from A. J. Grout, adding 5 genera and 58 species; 49 lichens from G. S. Merrill; 471 Chilean plants from D. E. Werdermann, adding 18 genera and 259 species. Some of these are not yet named, so the number of additions will be increased; 200 Mexican plants from Mrs. Ines Mexia, adding 7 genera and 90 species; 1,187 from Professor L. F. Henderson collected in eastern Oregon, many of which have not yet been named; 629 tropical African plants, the Zenker collection from the Kamerun District. This was purchased from Dr. Harold St. John, Pullman, Wash. There were about 500 duplicates in this collection which will be used for exchange. This added 180 genera, 562 species and 2 families; 240 from J. Aug. Kusche collected in the mountains near Douglas, Arizona. This collection contained many duplicates and was determined by the curator. It added several species, some of which may be new.

May 22, 1928

Mr. Eric Walther has contributed 130 exotics and a large collection from southern California which is still unlabelled. Small collections have come in from many correspondents whose names will appear in the list of donors.

Two bequests have come during the year to the library of the Botanical Department. The most important is a portion of the valuable botanical library of the late Wm. F. Herrin, and the other a book of paintings of California wild flowers by Addie L. Harris, bequeathed to the Academy by the artist. The California Botanical Club has given 200 water-color pictures of California wild flowers, painted by Sophie H. Fauntleroy. These will eventually be placed in the Herbarium each with the species depicted.

The curator continues to give addresses to schools and clubs on various botanical subjects and has done much to establish a garden of Shakespeare's flowers in Golden Gate Park through the Spring Blossom and Wild Flower Association. The annual flower show of this association is also an important and popular duty. The California Botanical Club numbers 83 members and a meeting is held or an excursion made almost every week. A class of Golden Gate Park gardeners meets bimonthly in the evening in the Herbarium to enable the ambitious gardeners to learn the names of the plants in the park.

The flower show in the vestibule of the Museum is kept up throughout the year. Hundreds of species both native and cultivated are shown, labelled with name and where found native. This is one of the most popular features in the Museum and has incited similar exhibitions in other places, notably in the Natural History Museum at Santa Barbara and the Museum at San Diego.

My assistant, Mrs. George H. Phelps, besides taking all the responsibility of this exhibition has most efficiently done the mounting of the specimens, distributing them into the Herbarium, attending to the drying and pressing of the fresh specimens that are constantly coming in, and in many ways, taking much detail herbarium work from the curator.

ALICE EASTWOOD, *Curator.*

#### DEPARTMENT OF ENTOMOLOGY

The work in the Department of Entomology during 1927 was largely that of assimilation. The increase of the collection through field work and donations by friends of the Academy was about normal, and one considerable collection of beetles was presented to the Department. But the work of labelling and incorporating the Van Dyke, Koebele, and other collections recently received, has, perhaps, been the most prominent single feature of our work.

In February Mr. Louis S. Slevin of Carmel presented to the Academy his collection of Coleoptera with about the same conditions under which the Van Dyke and Blaisdell collections were accepted, and the work of labelling and incorporating it is being carried along in connection with similar work on the other collections mentioned. Mr. Slevin's collection was formed in Monterey County, especially about Carmel, and is the result of careful systematic collecting of the species peculiar to that locality and of judicious exchanging with eastern collectors. It contains series of many rare species that were scarcely represented otherwise in our collection.

The work of rearranging our collection of Coleoptera is progressing satisfactorily. Already 84,000 specimens of beetles from the Van Dyke collection

have been incorporated into that of the Academy by Mr. J. O. Martin, and these have been, or are being, carefully checked over by Dr. Van Dyke. The beetles from the Koebele and Slevin collections are being run in at the same time with the Van Dyke material. So far 23,000 specimens from the Koebele collection have been incorporated with the Academy series, the most of which were beetles. The Blaisdell collection of Coleoptera is now safely stored in the Department laboratory and Dr. Blaisdell expects very soon to begin the work of incorporating these into the newly arranged Academy collection.

During 1927 the Curator has found time to rearrange a few more families of the Hemiptera, incorporating 14,000 specimens from his own material into that of the Academy. He has also continued the rearrangement of the moths in the Academy collection including those from the Koebele collection. These, with those presented to us by Dr. Barnes of Decatur, Illinois, make our collection fairly representative of the North American fauna in this interesting group of insects.

The additions to the Department of Entomology during 1927, other than those from the Slevin Collection, number 20,718 specimens. Of these additions the larger lots include the following: Curator's field work at Truckee and Reno, 5139 specimens; Mr. J. O. Martin's field work in a trip to Texas, 4865 specimens; Dr. E. C. Van Dyke's Oregon trip, 1570, and from shorter collecting trips 691 specimens. These Van Dyke lots do not include the Coleoptera taken by him which are counted in the Van Dyke collection. Mr. H. H. Keifer's field work about Oroville and elsewhere in California, 2275 specimens; purchased from Mrs. Dora Wright, 1426 insects from French Indo-China; purchased from J. A. Kusche, 1364 moths from the Chiricahua Mountains, Arizona; presented by Mr. L. S. Slevin, 1356 moths taken at Carmel not included in the Slevin collection of Coleoptera; from Mr. J. O. Martin, 722 insects from California; from Dr. E. H. Nast, 488 insects from California and Oregon; by exchange from Dr. H. H. Knight of Ames, Iowa, 388 paratypes of the hemipterous family Miridæ, representing 200 species described by him; from Mr. W. M. Giffard of Honolulu, 321 determined Hymenoptera from the Sierra Nevada; and from Dr. Wm. Barnes of Decatur, Illinois, 1000 moths to fill vacancies in our collection. Valuable and interesting material was also received from the following: Mr. E. R. Leach, Miss Annette Braun of Cincinnati, Mr. C. L. Hill, Mr. J. E. Cottle, Dr. W. S. Blatchley of Indianapolis, Dr. G. Dallas Hanna, Mr. F. H. Wymore, Mr. O. C. Poling, Mr. J. D. Gunder of Pasadena and Miss Mary E. McLellan of the Academy.

The publication of the *Pan-Pacific Entomologist* has been continued through the year. As stated last year this periodical furnishes an outlet for some of the shorter papers dealing with the Academy material. Fourteen such papers were published in the four numbers for 1927. These fill 63 pages and include descriptions of 39 new species, the types of which are in the Academy collection.

Again we wish to emphasize the pressing need of more room for the Department of Entomology. It looks as though another year would see about the last available space occupied. The Academy has accepted these large and valuable collections and is in duty bound to furnish suitable accommodations for their housing and arrangement. The west coast is on but the threshold of its development, in science as well as in industry. Some day it will have a great museum of natural history comparable to those in the east, and if the California

Academy of Sciences does not improve its opportunity and build up such a museum some other institution will. This Academy has already laid a splendid foundation for such a museum, but it is only a foundation and it should not rest content with what it has accomplished but must press forward and take full advantage of the opening it has made. Most important just now is a new research building to furnish space for the development of certain of the departments now badly overcrowded. Then there should be more help provided for the care and development of the great mass of material acquired.

This Academy has assumed the leadership in this work here on the coast. We must now push forward or we will slip backward; we cannot remain stationary. We must embrace the unique opportunity now open to us or we will lose it. Our entomologists here have supported this department most valiantly but they will not continue their support if we do not do our part in properly caring for the valuable material they have given their time and money to secure for us.

E. P. VAN DUZEE, *Curator.*

#### DEPARTMENT OF EXHIBITS

The Department of Exhibits reports satisfactory progress during the year. With the completion of four more panel groups all available spaces in the Bird and Mammal Halls are filled.

These groups are: California Pocket Gopher and California Mole; Tejon Bat, Pacific Pallid and Mexican Free-tailed Bat; California Grey Squirrel; and Gila Woodpecker.

In September it was decided to participate in the Pacific Foreign Trade and Travel Exposition, to be held in the Civic Auditorium, San Francisco.

Under the direction of Mr. Joseph R. Slevin, Assistant Curator of Herpetology, and with his help and that of my assistants, eleven groups of reptiles were constructed, completed and installed by the opening day, November 11, 1927.

These groups were: Giant Galapagos Land Tortoises, Red Diamond Rattlesnake, Chuckwalla, Boyle's Milk Snake, Western Collared Lizard, Horned Rattlesnake, Marbled Salamander, Northern Crested Lizard, Leopard Lizard, Tricolor Ground Snake, Desert Gridiron-tailed Lizard.

In addition, 11 species of California fungi, modeled in wax, were exhibited in two groups, also four portable school groups, two of which were constructed especially for this exhibit. The exhibit received very favorable comment and fulfilled the twofold purpose of advertising the Academy's activities and suggesting what might be accomplished in a Reptile Hall, in Botanical Exhibits, and School Extension work.

The total number of habitat groups completed during the year was 19. In addition much work was accomplished for the Department of Ornithology and Mammalogy, including the cleaning of a large number of skulls and skeletons which had accumulated over a period of years, tanning a quantity of hides, and making over 100 large bird skins from salted specimens.

A considerable number of wax models of flowers, fruits, and fungi were made for a future botanical exhibit. This amount of work was made possible by the

employment, during the greater part of the year, of Miss Clara Tose, as assistant in accessories and Russell Hendrick as general assistant. Cecil Tose also rendered assistance at various times. They have all done excellent work.

Three expeditions were undertaken during the year, as follows: April 27 to June 7, in San Diego County, with Mr. Joseph R. Slevin. Specimens were collected and sketches made for many of the reptile groups exhibited later in the year. Considerable material was collected for school groups and for additions to the Desert Bird Group.

June 25 and 26, to Cloverdale, Sonoma County, for the purpose of securing material for a group of Bats.

November 15, 1927, to January 7, 1928, as a guest of Captain G. Allan Hancock, to the Galapagos Islands. Accessory material was secured for a Gigantic Tortoise Group, and complete material and sketches for groups of Sea and Land Iguanas of the Galapagos Islands, and the Rock Iguana of the Tres Marias.

FRANK TOSE, *Chief*.

#### DEPARTMENT OF FISHES

This department is being built up for the mutual interest and benefit of the Museum and the Aquarium. From time to time interesting specimens die in the Aquarium and it is the policy to save such specimens to put in a reference collection or for special study. Our collectors in the field often secure duplicate specimens that are of value for anatomical studies or for exchange. Some of the expeditions which the Museum sends out make considerable collections of the fishes of the region visited and these are cared for by this department. We are in these various ways gradually building up an extensive reference collection of fishes, particularly of the freshwater and salt water species of California and of the Hawaiian fish fauna, which will supplement the live exhibits in the Aquarium. In time we hope to have in this Reference Collection, at least one good specimen of every species of fish known to occur in Western America (particularly in California), and in the Hawaiian Islands.

H. WALTON CLARK, *Assistant Curator*.

#### DEPARTMENT OF HERPETOLOGY

During the year 1927, in the regular work of classification, special attention was paid to the collection of Amphibians, and 1106 specimens were permanently installed. In addition to this 1723 specimens from various accessions were recorded, labeled, and card-catalogued.

There have been added to the collection during the year 806 specimens so that it has now grown to 62,556 specimens.

Gifts of specimens have been received as follows: From Mrs. C. W. Campbell, 2; L. M. Klauber, 152; W. M. Mann, 2; Dr. G. Dallas Hanna, 1; F. M. Anderson, 2; L. S. Slevin, 3; J. O. Martin, 3; A. M. Woodbury, 12; Frank Arundel, 5; Steinhart Aquarium, 20; Dr. E. C. Van Dyke, 10; E. R. Leach, 2; J. W. Mailliard, 1; Don C. Meadows, 2; and C. S. Bishop, 2.



Specimens have been secured from 10 counties of California as follows: Alameda, 2; Kern, 3; Los Angeles 2; Marin, 2; Mendocino, 1; Monterey, 3; Napa, 20; San Diego, 551; Shasta, 1; and Ventura, 5.

Specimens from other localities are: Arizona, 8; Florida, 15; Idaho, 5; Kansas, 18; Michigan, 2; New York, 2; Oregon, 3; Utah, 12; Africa, 3; Costa Rica, 1; Dominica, 1; Ecuador, 1; Jamaica, 4; Mexico, 2; Nicaragua, 8; and Porto Rico, 6.

In conjunction with the Department of Exhibits an expedition was made in April and May to San Diego County, California, for the purpose of securing some of the rare burrowing snakes inhabiting that region. The collection of 401 specimens made on this expedition includes a series of the Tricolor Ground Snake, one of the rarest of Californian snakes, and a specimen of the Leaf-nosed Snake, the fourth taken in California.

Through the courtesy of Captain G. Allan Hancock of Los Angeles, a second expedition was made to the Galapagos Islands. This expedition was made for the express purpose of collecting specimens of the Land and Sea Iguanas peculiar to the Galapagos for the making of habitat groups, and included stops at Cocos, Malpelo, Isabel, and the Tres Mariettas islands. Captain Hancock afforded every opportunity to carry on the work, and through his kindness and enthusiasm, all the necessary specimens and accessories were secured. The stop at Malpelo Island resulted in securing an excellent series of lizards not heretofore represented in the collection.

An account of the Amphibians of Western North America, intended as a companion volume to the work already published on the Reptiles has been presented for publication.

JOSEPH R. SLEVIN, *Assistant Curator.*

#### LIBRARY

Total accessions to the Library during 1927 numbered 9809 items, of which 2447 were complete volumes, 7243 were pamphlets, and 119 were maps. Of the complete volumes, 241 were received as gifts, 1205 by exchange, and 1001 by purchase. These figures show a considerable gain over those for 1926, and compare favorably with figures given by some of the great natural history libraries of the eastern states. An important part of the botanical library of the late William F. Herrin was bequeathed to the Academy and it is expected that this very important acquisition will be incorporated in the Library during 1928. The Koebele gift, chiefly entomological, also represents an important addition; these books are not included in the figures given above, as they are still in process of being listed and filed.

New exchanges during 1927 numbered 33. This number represents only a few of the institutions which are not as yet on the Academy's list, and whose publications are needed here.

Early in 1927 it became the custom to keep the Library open during Saturday afternoon and already this has proved a step in the right direction. Members have come in who would not have been able to visit the Library at other times; and students from the University of California and Stanford University have discovered opportunities to use the Academy's Library on Saturday afternoons, and have expressed their appreciation.

The Library is becoming crowded for space. The large collection of duplicates is now in such order that much of it can be disposed of, by sale or exchange, as such transactions may be authorized, and additional room can thus be made available. Irrelevant material not incorporated in the Library but occupying shelf-space offers a serious difficulty, and must somehow be disposed of, not only to make space but also to render these valuable books available to readers who will not readily find them here.

Comparatively little binding was done in 1927, as the Library fund was called upon to provide for extensive purchasing. It is hoped that more binding will be done in the present year.

The catalogue remains seriously in arrears, although the libraries in the departments of Botany and Herpetology have been catalogued to some extent during the past year. In the Department of Herpetology, Miss Hicks has bound and catalogued a large collection of separates and other pamphlets, so that this department library is now in better condition than the others. Miss Arnold has succeeded in bringing up to date an author analysis of a few of the more important serials, and Library of Congress cards have been ordered for future issues. By the end of 1928 it is hoped to have completed the author analysis of the most important serials, and to have Library of Congress cards for such as are so catalogued. The subject catalogue can then be carried forward to cover such serials, insofar as printed cards are not available.

Care of the reserve stock of Academy publications, filling of orders, and distribution of new issues, constitute a large portion of the library work. The reserve stock of some of our publications is unnecessarily large. Certain publications, such as Occasional Paper No. 10, and some of the geological papers, can be sold to a considerable extent if properly circularized, if one may judge from the present sale without advertising. It is hoped that some progress in this direction may be made during 1928, not only to make space and to increase circulation of the Academy's publications, but also to add to the income.

Mr. Raymond Smith has continued to assist in the distribution of publications.

I. M'GUIRE, *Assistant Librarian.*

#### DEPARTMENT OF ORNITHOLOGY AND MAMMALOGY

The present curator took charge of the department on March 1, coincident with the retirement of Mr. Joseph Mailliard as curator emeritus. This change did not involve any alteration in departmental policies or lines of work; current activities have been of about the same nature as before.

Circumstances permitted the prosecution of rather more field work than has been done for several years. The most important of this work was carried on by Mr. C. G. Harrold, of Winnipeg, Manitoba, who accompanied Professor George Haley, of San Francisco, on a trip to Alaska. Several of the Academy's departments were interested in this expedition, but Mr. Harrold's time was devoted almost entirely to birds and mammals (especially birds) and an important collection was made. He was gone from May 10 to November 6. He visited Sitkalidak, Unalaska, Akutan, and Nunivak islands, but the bulk of the collecting

and the most important observations were made upon Nunivak. This large island had not previously been visited by an ornithologist and the resulting collection of birds is of prime importance. It will form the basis of a published report later on. Included therein are at least two species that are new to the North American avifauna, and there are also certain rare species represented by series of specimens that will repay study from various angles. Mr. Harrold donated his services, his actual expenses being the only cost to the Academy. The success of his labors (under extremely trying conditions) can hardly be over-emphasized; it is doubtful if any other single individual, in the same length of time, has brought out of Alaska as many and as beautifully prepared bird specimens. Mr. Harrold's field notes, too, will add greatly to any published account of this collection.

Field work was carried on in southeastern Arizona during much of the summer. The region explored comprised the lowlands surrounding the Santa Rita Mountains, southeast of Tucson and a few miles north of the United States-Mexico boundary. There is a problem in animal distribution presented in this particular section that had attracted the writer's attention years ago, and advantage was taken of the opportunity for further investigations there at this time. Work was carried on as follows: By Messrs. H. S. Swarth and J. Mailliard, with Raymond Gilmore as assistant, and D. M. Gorsuch of Tucson, as volunteer aid during most of the time, from May 6 to June 25. Half of this time was spent near Patagonia, on the east side of the Santa Ritas, and half at the Florida Ranger Station on the west side; by J. Mailliard, with Floyd Rankin as assistant, August 23 to October 17, near Patagonia; and by Miss Mary E. McLellan, September 1 to October 13, in Madera Cañon, on the west side of the Santa Ritas.

Departmental work of the sort that is necessary to the proper care of the collections has taken, and will take, a large part of the time of the department's staff. The identifying, cataloguing and installing of the year's accessions is by itself a big undertaking, and the crowded condition of the general collection makes such work more difficult. Five storage cases were purchased at the end of the year, some of which may be used to relieve the congestion in parts of the collection. All of the cataloguing and the bulk of the other curatorial drudgery has fallen upon Miss McLellan. Mr. Mailliard since his retirement has spent much of his time at the Museum upon the proper arrangement of the Mailliard collection of birds and eggs, and he has also helped at various times at curatorial work in the general collection.

Several studies are under way of material in the bird and mammal collections. The writer is engaged upon a report covering the work that was done in Arizona. He has also begun a study of the enormous series of land birds of the Galapagos Islands in the collection, gathered upon the Academy expedition to those islands in 1905-1906. These birds, comprising one of the most important collections ever made on the Galapagos, have not yet been identified and studied, and this work will be pushed to completion as rapidly as circumstances permit. Miss McLellan has nearly completed a paper on the distribution of the wedge-tailed shearwater, and, in collaboration with Dr. G. Dallas Hanna, has finished a paper entitled "Skull characters of the Alaska fur seal." She is now engaged in a study of certain osteological features of the northern elephant seal.

It is a satisfaction to report that the bird collection of the Academy is of sufficient importance to have attracted the attention of various visiting ornithologists of international renown. During the past year some of our distinguished visitors from a distance were Mr. Gregory M. Mathews, England, Mr. Jean Delacour, France, Mr. Masa U. Hachisuka, Japan, Dr. T. Gilbert Pearson, President of the National Association of Audubon Societies, Mr. P. A. Taverner, Ottawa, Canada, and Dr. T. S. Palmer, United States Biological Survey.

This department has had occasion to call upon other institutions for information and for the loan of specimens, and, similarly, we have occasionally been able to assist others in their studies. Dr. E. W. Nelson and Major E. A. Goldman, of the United States Biological Survey, spent several days at the Academy examining birds and mammals from Mexico in our collection, and they subsequently borrowed many of these specimens to be forwarded to Washington for further study.

During 1927 there were added to the collection: birds, 1858; mammals, 519. The specimens are mostly the usual "study skin" of bird, and "study skin," plus skull, of mammal, but there are a few bird skeletons entire, and a few mammal skulls without accompanying skins. Most of this material came from the above described field trips, as follows: C. G. Harrold, Alaska, 555 bird skins, 10 bird skeletons, 74 mammals, 12 sets of birds' eggs. Swarth, Mailliard, Gilmore, and Gorsuch, Arizona, 429 birds, 321 mammals, 10 sets of birds' eggs. Mailliard and Rankin, Arizona, 424 birds, 10 mammals. Miss McLellan, Arizona, 274 birds, 92 mammals.

Other accessions are as follows: Birds. *Gift*: Dr. Frank E. Blaisdell, 14; Mr. A. W. Robison, 9; Mr. E. W. Gifford, 1; Mr. Morris Green, 1; Mr. T. Mori, 6; Mr. Trygve Ronneberg, 3; Mr. W. C. Lewis, 1; Mr. A. C. Griffith, 1; Mr. Perc Meakin, 1; Mrs. Fanny Koebele, 44; California Fish and Game Commission, 3; Mr. John McLaren, 2; Miss Kruger, 2; Mr. J. W. Steinbeck, 1; Mr. W. M. Giffard, 28; Mr. A. C. Montgomery, 6; Mrs. A. C. Sulkamp, 3; Mr. J. O. Martin, 1; Mrs. W. M. Willett, 2; Mr. Frank A. Leach, 1. *Purchase*: Mr. J. T. Wright, 36.

Eggs. *Gift*: Capt. H. W. Rhodes, 41; Mr. John W. Classen, 1; Dr. G. Dallas Hanna, 2.

Mammals. *Gift*: Mrs. Paul Paige, 1; Mr. and Mrs. Harry Archambault, 1; Mr. Jack Solini, 1; Mr. John McLaren, 2; Mr. Frank A. Leach, 1; Mrs. Constance Campbell, 1; Dr. Frank E. Blaisdell, 6; Mr. A. W. Robison, 1; Steinhart Aquarium, 1; Mr. H. W. Clark, 1; Miss Mary Elizabeth Reed, 1; Mr. A. Holm, 1; Mr. Peterson, 1. *Purchase*: Mr. J. T. Wright, 3.

HARRY S. SWARTH, *Curator*.

#### DEPARTMENT OF PALEONTOLOGY

Valuable material from several well selected localities was added to the collection of the Department of Paleontology during 1927. The available storage space allotted to the department has now become so restricted that general duplication of collections must be curtailed and the normal growth of the research collection must follow a limited and well considered plan. Long ago this situation was anticipated and such collections as were not most often

consulted were stored in the basement of the Museum in such a manner as to permit their being as accessible as possible in such a situation. The basement is poorly lighted and ventilated and was never intended to be put to such use when the building was designed; it can only be used for this purpose as a temporary expedient until better facilities are available but already at least half of the bulk of the department's collection is stored there.

A valuable collection of Cretaceous and Jurassic fossils was obtained in eastern Mexico through the efforts of Messrs. L. G. Hertlein and T. F. Stipp; this material is necessary for comparison with our western fossils of equivalent age. Also, a large collection of Tertiary and Cretaceous Foraminifera was obtained in the same territory by Mr. C. M. Carson.

An excellent collection of Cretaceous fossils was obtained in Butte County, California, at one of the collecting stations of the old California Geological Survey.

Pliocene material was obtained in the vicinity of Banning and San Diego to supplement collections already made. For the same purpose some work was done in the Pleistocene at San Pedro.

Probably the most noteworthy collection added to the department during 1927 was that made by Messrs. Hertlein and Rixford on San Miguel, Santa Rosa and Santa Cruz islands. A very considerable collection of well-selected fossils from the Miocene was obtained on these islands and much data on the geology was secured. Also many land and marine shells and samples of diatomaceous shales were brought back.

Messrs. George Haley and C. G. Harrold obtained some excellent recent shells during their field work in Alaska.

The Curator continued to add to the collection of organic shales. The samples retained were chosen primarily because of their containing well preserved diatoms, foraminifera, radiolarians, ostracods or silicoflagellates.

A large collection of recent land and freshwater shells from China was purchased from Mr. and Mrs. John T. Wright. The collection is being studied by Dr. Bryant Walker who shared in the expense of purchase.

Dr. Barton Warren Evermann and the Curator obtained a most unusual assemblage of living diatoms from Pyramid Lake, Nevada. It is expected that a study of these organisms will shed some light on the origin and history of this interesting body of water.

The arrangement of the collections in the Museum is considered to be regular routine work and calls for no special mention except in regard to the collection of type specimens. All type material in the custody of the department is segregated from the general collection and separately catalogued. This type collection now numbers more than 3,000 specimens and the records respecting each one are kept strictly up to date. A study as broad as paleontology, embracing as it does the entire organic world, necessarily requires that such a collection of types be systematically arranged. That the methods adopted by the department are highly satisfactory is best shown by the very complimentary comments of officials in charge of similar institutions elsewhere.

Late in 1926, as mentioned in the report for that year, there was announced the discovery of a synthetic resin suitable for mounting microscopic objects. It was later shown that this resin increased the visibility of an object mounted



therein, 450 percent over the visibility of the same object in Canada balsam, the usual mountant. It may now be recorded that this resin has proved to be chemically stable, easily manipulated, and optically superior to any hitherto known mounting medium. The discovery of this material, called "A. F. S.", was the incentive for further research with synthetic resins and it is now fitting to announce that two of these interesting substances made of (1) thiocarbani-  
lide, trioxymethylene and iodine, and (2) naphthalene and formaldehyde, have properties which would seem to make them valuable in increasing the visibility of microscopic objects. Both of these resins require observation for several months more in order to determine their chemical stability but it is not likely that they will prove disappointing.

Paleontology is such a broad branch of science that the literature on the subject is very voluminous and widely scattered. However, without a considerable proportion of this literature available for consultation no serious research can be attempted and no results can be obtained which are likely to be of more than extreme local interest. Additions to the library in 1927 pertaining to geology and paleontology have been the most important and satisfactory for many years; this has been due to the efforts of our Librarian, Mr. Ignatius M'Guire. It is believed that the continued acquisition of such specialized literature in the future is most important and it is hoped that the beginning which has been made may be continued.

Outstanding loans from the collections in the custody of the department at the end of the year were charged to the following persons: Dr. Paul Bartsch, U. S. National Museum; Dr. Remington Kellogg, Carnegie Institution; Dr. S. S. Berry, Redlands, Calif.; Dr. Fred Baker, Point Loma, Calif.; Mr. A. M. Strong, Los Angeles, Calif.; Dr. Bryant Walker, Detroit, Mich.; Dr. Junius Henderson, University of Colorado; Dr. Albert Mann, Carnegie Institution.

The efficient and faithful assistance rendered by the assistants in the department, Mr. Leo George Hertlein, Assistant Curator and Mr. Emmet Rixford Jr., temporary assistant, is acknowledged with much pleasure. Also Mr. Frank M. Anderson has given his time unstintingly in the identification and arrangement of the collections and, as usual, he has contributed many fossils of lasting value to the Academy's collection.

G. DALLAS HANNA, *Curator*.

#### STEINHART AQUARIUM

On September 29, 1927, the Steinhart Aquarium passed its fourth anniversary. It is a pleasure to record that the Aquarium still remains among the most popular public institutions in San Francisco.

The total number of live specimens of all kinds in the tanks December 31, 1927, was 8754, representing 370 different species, an increase of 658 specimens and 69 species over last year. At the same time, there has been a most satisfactory decrease of 272 specimens in the mortality list.

The different branches of the animal kingdom are represented in the following numbers:

Mammals.....	11 specimens of.....	5 species
Birds.....	3 specimens of.....	2 species
Reptiles.....	136 specimens of.....	35 species
Batrachians.....	41 specimens of.....	6 species
Fishes.....	8241 specimens of.....	256 species
Invertebrates.....	322 specimens of.....	6 species
Total.....		8754
		310

The above is exclusive of the numerous young trout and salmon in the hatchery, where several thousand young fish have been hatched during the year.

Friends of the Aquarium have been very generous during the past year, 2170 donations having been received since December, 1926. Among these gifts were eight alligators and two crocodiles, two seals and one California sea-lion. A detailed list with the names of the donors will be found in the appendix. This number is exclusive of several thousand Mosquito fish given us by the State Board of Health for free distribution, and of 1473 specimens of fishes and plants bred or grown in the Aquarium greenhouse. During this period the exchange and gifts from the Aquarium numbered 1452.

One of the most interesting exhibits shown during the past year was four Porpoises. Owing, however, to the poor condition of the water these lived only six weeks.

Through the kindness of the Matson Navigation Company we received on November 24 the first tropical fishes from Pago Pago, Samoa, that have ever been shown in the United States. These are brilliantly colored reef-fishes considerably brighter than any of the Hawaiian fishes. Eighty-eight specimens representing 23 species have been received from those distant islands.

For the most part the specimens on exhibition are healthy and contented. This was well illustrated by the Golden Trout, which made their nest, spawned, and hatched their young in Tank 32. These young fish were transferred to the hatchery and have now reached the fingerling stage. They have passed most of the dangers common to the early life of fishes. This is the first time these fish have ever been known to breed in captivity.

During the past year the total number of fishes raised in the Aquarium greenhouse and distributed to the exhibition tanks was 709 specimens of 27 species. In addition there were 1218 aquatic plants grown and distributed. There now remains (as per invoice of September 30, 1927) in the greenhouse 618 fishes distributed in 73 breeding aquariums.

A small number of useful books has been added to the library during the year.

In the Laboratory the Aquarium Society has held regular meetings each month, usually with an exhibition of fishes and lectures on aquarium subjects.

Research work has been conducted in the laboratory on the nervous system of certain sharks by a graduate student, Miss Edith Stokes, of the University of California. Mr. Edward Jockeny of the University of California also occupied one of the tables with research work during March and April.

During the past year President Grunsky of the California Academy of Sciences visited a number of the European aquariums and returned with some valuable suggestions for improvements at our institution. We hope that during the coming year a number of these suggestions, especially those relating to an increase in the invertebrate exhibits and the lining of additional tanks with attractive rock work, may be carried out.

ALVIN SEALE, *Superintendent.*

#### GIFTS TO STEINHART AQUARIUM IN 1927

The accessions to the Steinhart Aquarium by donation or otherwise in the year have been many, as shown in the following itemized list.

DATE	No.	ARTICLE	DONOR
Jan.	9 3	Carassius auratus.....	A. Sarnsen, San Francisco, Calif.
"	9 1	Diacanthiodon ensatis....	A. Sarnsen, San Francisco, Calif.
"	9 1 lot	Gambusia affinis.....	California State Board of Health.
"	12 2 lots	Trout and salmon Eggs..	California State Fish and Game Commission.
"	13 6	Lebistes reticulatus.....	H. Walton Clark, San Francisco, Calif.
"	13 2	Acipenser transmontanus.	Luigi Cosignany, Collinsville, Calif.
Feb.	2 5	Starfish.....	Edmond Conasay, San Francisco, Calif.
"	2 2	Sea Cradles.....	Edmond Conasay, San Francisco, Calif.
"	2 1 lot	Salamander Eggs.....	Edmond Conasay, San Francisco, Calif.
"	4 12	Platypœcilus auratus.....	Alvin Seale, San Francisco, Calif.
"	12 4	Chrysemys elegans.....	Russel Warren Welch, San Francisco, Calif.
"	22 1	Chelopus marmoratus....	Mrs. M. Nicolai, San Francisco, Calif.
"	28 1	Phoca geronimensis.....	I. Alioto, San Francisco, Calif.
Mar.	2 12	Platypœcilus immaculatus	Alvin Seale, San Francisco, Calif.
"	7 5	Platypœcilus helleri.....	Alvin Seale, San Francisco, Calif.
"	7 70	Aquatic plants.....	Alvin Seale, San Francisco, Calif.
"	14 2	Chrysemys elegans.....	Mrs. E. P. Van Duzee, Alameda, Calif.
"	16 1	Alligator mississippiensis..	William Cronan, San Francisco, Calif.
"	18 2	Alligator mississippiensis..	Masters Jack and Harry Powell, San Francisco, Cal.
"	22 4	Platypœcilus pulchra.....	Alvin Seale, San Francisco, Calif.
"	22 1	Mollienisia latipinna.....	Alvin Seale, San Francisco, Calif.
"	28 2	Chrysemys elegans.....	Miss Wanda Berkovits, San Francisco, Calif.
April	2 12	Mollienisia latipinna.....	Alvin Seale, San Francisco, Calif.
"	2 1	Chelopus marmoratus....	Fred Fisher, San Francisco, Calif.
"	4 12	Portugese Man-of-war...	Jack Douglass, San Francisco, Calif.
"	4 124	Aquatic plants.....	Alvin Seale, San Francisco, Calif.
"	6 6	Lebistes reticulatus.....	Alvin Seale, San Francisco, Calif.
"	6 4	Platypœcilus maculatus..	Alvin Seale, San Francisco, Calif.
"	8 16	Lebistes reticulatus.....	Frank Locke, San Francisco, Calif.
"	8 6	Xiphophorus helleri.....	Frank Locke, San Francisco, Calif.
"	8 8	Platypœcilus maculatus..	Frank Locke, San Francisco, Calif.
"	8 8	Danio rerio.....	Frank Locke, San Francisco, Calif.
"	8 2	Limia arnoldi.....	Frank Locke, San Francisco, Calif.
"	8 2	Haplochilus chaperi.....	Frank Locke, San Francisco, Calif.

GIFTS TO STEINHART AQUARIUM IN 1927—*Continued*

DATE	No.	ARTICLE	DONOR
April	8	1 <i>Badis badis</i> .....	Frank Locke, San Francisco, Calif.
"	8	1 <i>Mollienisia latipinna</i> .....	Frank Locke, San Francisco, Calif.
"	10	2 <i>Cobitis fossilis</i> .....	L. Kemiuli, San Francisco, Calif.
"	10	1 <i>Triturus torosus</i> .....	L. Kemiuli, San Francisco, Calif.
"	11	6 <i>Lebistes reticulatus</i> .....	H. Walton Clark, San Francisco, Calif.
"	14	30 Aquatic Plants.....	H. Walton Clark, San Francisco, Calif.
"	18	1 <i>Phoca geronimensis</i> .....	Alexander Paladini, San Francisco, Calif.
"	20	1 <i>Chelopus marmoratus</i> ....	P. J. Odea, San Francisco, Calif.
"	21	2 <i>Carassius auratus</i> .....	D. Carten, San Francisco, Calif.
"	22	6 <i>Xiphophorus ruber</i> .....	Alvin Seale, San Francisco, Calif.
"	26	18 <i>Carassius auratus</i> .....	Bruce's Goldfish Hatchery, Thornburgh, Iowa.
"	28	7 <i>Mollienisia latipinna</i> .....	Alvin Seale, San Francisco, Calif.
"	28	6 <i>Platyœcilus niger</i> .....	Alvin Seale, San Francisco, Calif.
"	28	2 <i>Xiphophorus ruber</i> .....	Alvin Seale, San Francisco, Calif.
"	28	10 <i>Macropodus opercularis</i> ..	Alvin Seale, San Francisco, Calif.
May	1	1 <i>Phoca geronimensis</i> .....	Stagnaro Fish Company, Santa Cruz, Calif.
"	4	1 Lychee Tree.....	G. W. Graff, Berkeley, Calif.
"	5	12 <i>Lebistes reticulatus</i> .....	Alvin Seale, San Francisco, Calif.
"	10	14 <i>Lebistes reticulatus</i> .....	H. Walton Clark, San Francisco, Calif.
"	14	1 <i>Randallia ornata</i> .....	Alaxander Paladini, San Francisco, Calif.
"	14	1 lot Eggs ( <i>Salmo irideus</i> ).....	California State Fish and Game Commission.
"	17	3 <i>Chrysemys elegans</i> .....	Mrs. H. Patten, San Francisco, Calif.
"	18	4 <i>Betta splendens</i> .....	Dr. Hugh M. Smith, Bangkok, Siam.
"	21	72 Aquatic plants.....	Alvin Seale, San Francisco, Calif.
"	24	6 <i>Platyœcilus maculatus</i> ..	Alvin Seale, San Francisco, Calif.
"	24	239 Aquatic plants.....	Alvin Seale, San Francisco, Calif.
"	25	1 <i>Diemictylus pyrrhogaster</i> .	Mrs. E. J. Spears, San Francisco, Calif.
"	26	1 <i>Rana catesbiana</i> .....	California State Fish and Game Commission.
June	2	24 <i>Platyœcilus pulchra</i> ....	Alvin Seale, San Francisco, Calif.
"	2	40 <i>Lebistes reticulatus</i> .....	Alvin Seale, San Francisco, Calif.
"	2	2 <i>Oryzias latipes</i> .....	Alvin Seale, San Francisco, Calif.
"	9	2 Alligator mississippiensis..	Mrs. S. J. Bettman, San Francisco, Calif.
"	13	1 <i>Chondrotus tenebrosus</i> ...	W. H. Penniman, Santa Cruz, Calif.
"	17	125 <i>Lebistes reticulatus</i> .....	Clynt S. Martin, San Francisco, Calif.
"	17	8 <i>Xiphophorus helleri</i> .....	Clynt S. Martin, San Francisco, Calif.
"	25	923 <i>Salmo henshawi</i> .....	Washoe County Fish Hatchery, Reno, Nevada.
"	3	3 <i>Spatula clypeata</i> .....	Paul Paige, San Francisco, Calif.
July	7	6 <i>Platyœcilus ruber</i> .....	Alvin Seale, San Francisco, Calif.
"	9	1 Alligator mississippiensis..	W. E. Noble, San Leonardo, Calif.
"	9	1 <i>Chelopus marmoratus</i> ....	J. Wallenens, Berkeley, Calif.
"	9	2 <i>Mollienisia latipinna</i> .....	Alvin Seale, San Francisco, Calif.
"	12	12 <i>Platyœcilus niger</i> .....	Alvin Seale, San Francisco, Calif.
"	18	6 <i>Xiphophorus helleri</i> .....	Alvin Seale, San Francisco, Calif.
"	18	76 Aquatic plants.....	Alvin Seale, San Francisco, Calif.
"	18	6 <i>Chrysemys elegans</i> .....	Elmer Coggins, San Francisco, Calif.
"	19	1 <i>Crocodylus americanus</i> ...	F. Gamaych, San Francisco, Calif.
"	24	1 <i>Chelopus marmoratus</i> ....	Miss Murial Fraser, Oakland, Calif.

GIFTS TO STEINHART AQUARIUM IN 1927—*Continued*

DATE	No	ARTICLE	DONOR
July	24	2 Alligator mississippiensis..	D. Russek, San Francisco, Calif.
"	26	1 Iguana tuberculata.....	D. C. Panella, San Francisco, Calif.
"	26	6 Haplochromis multicolor..	Alvin Seale, San Francisco, Calif.
"	27	6 Platypœcilus maculatus..	Alvin Seale, San Francisco, Calif.
"	28	8 Xiphophorus ruber.....	Alvin Seale, San Francisco, Calif.
"	28	1 Phoca geronimensis.....	International Fish Co., San Francisco, Calif.
Aug.	3	110 Aquatic plants.....	Alvin Seale, San Francisco, Calif.
"	3	1 lot Gambusia affinis.....	California State Board of Health, Sacramento, Calif.
"	5	6 Platypœcilus maculatus..	Alvin Seale, San Francisco, Calif.
"	7	1 Crocodilus americanus...	F. M. Page, Richmond, Calif.
"	13	13 Dallia pectoralis.....	W. A. Murry, San Francisco, Calif.
"	17	175 Aquatic plants.....	Alvin Seale, San Francisco, Calif.
"	18	12 Macropodus opercularis..	Alvin Seale, San Francisco, Calif.
"	22	200 Aquatic plants.....	Alvin Seale, San Francisco, Calif.
"	23	70 Tropical fishes.....	Alvin Seale, San Francisco, Calif.
"	26	200 Tropical fishes.....	Alvin Seale, San Francisco, Calif.
"	26	250 Tropical fishes.....	Alvin Seale, San Francisco, Calif.
"	29	1 Chelopus marmoratus....	Miss Betty Hall, San Francisco, Calif.
"	30	1 Chondrotus tenebrosus...	J. Black, San Francisco, Calif.
Sept.	1	1 Alligator mississippiensis..	B. G. Reynolds, San Jose, Calif.
"	3	4 Xiphophorus ruber.....	Alvin Seale, San Francisco, Calif.
"	23	56 Agosia chrysogaster.....	Joseph Mailliard, San Francisco, Calif.
"	25	88 Gillichthys mirabilis....	Dr. A. E. Cerf, San Francisco, Calif.
"	28	70 Tropical fishes.....	Alvin Seale, San Francisco, Calif.
"	28	388 Aquatic plants.....	Alvin Seale, San Francisco, Calif.
Oct.	7	4 Cyprinodon macularius...	Joseph Mailliard, San Francisco, Calif.
"	7	41 Agosia chrysogaster.....	Joseph Mailliard, San Francisco, Calif.
"	10	1 Tatusia novemcincta.....	Henry E. Elrod, San Benito, Texas.
"	11	2 Gopherus berlandieri....	Henry E. Elrod, San Benito, Texas.
"	18	25 Lebistes reticulatus.....	H. Walton Clark, San Francisco, Calif.
"	18	1 Chelonia agassizii.....	W. O. Fletter, San Francisco, Calif.
"	24	1 Alligator mississippiensis..	Mrs. G. Ball, San Francisco, Calif.
"	25	1 Alligator mississippiensis..	Mrs. C. Brennan, San Francisco, Calif.
"	28	1 Anolis carolienesis.....	Mrs. J. Simpers, San Francisco, Calif.
"	31	15 Small Snakes.....	A. Albers, San Francisco, Calif.
Nov.	8	7 Carassius auratus.....	Mrs. Eva Williams, Sacramento, Calif.
"	24	36 Samoan fishes.....	C. J. Knudsen, San Francisco, Calif.
"	22	1 Clemmys insculptus....	Dr. S. C. Bishop, Albany, New York.
"	25	12 Lebistes reticulatus.....	H. Walton Clark, San Francisco, Calif.
Dec.	9	1 lot Gambusia affinis.....	California State Board of Health, Sacramento, Calif.
"	13	2 lots Trout and salmon Eggs..	California State Fish and Game Commission.
"	21	2 lots Gambusia affinis.....	California State Board of Health, Sacramento, Calif.
"	26	1 lot Whitefish Eggs.....	United States Bureau of Fisheries, Washington.



## FINANCIAL STATEMENTS

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### REPORT OF THE TREASURER

For the fiscal year ending December 31, 1927

January 1, 1927, Balance due Crocker First National Bank. . . . \$ 4,099.46

*Receipts:*

Dues . . . . .	\$ 3,568.35	
Charles Crocker Scientific Fund Endow- ment Income . . . . .	1,703.88	
James Lick Endowment Income . . . . .	68,572.77	
General Income . . . . .	18,724.11	
John W. Hendrie Endowment Income . . . .	960.00	
Publication . . . . .	315.30	
Interest . . . . .	1,012.90	
Ignatz Steinhart Trust Interest . . . . .	600.02	
Post Card Sales . . . . .	1,139.37	
Bills Receivable . . . . .	9,000.00	
W. G. Wright Fund . . . . .	3.50	
		<hr/>
		105,600.20
		<hr/>
		\$101,500.74

## REPORT OF THE TREASURER—Continued

*Expenditures:*

Interest.....	\$ 12,042.37
Contingent Fund.....	570.33
Salary Expense General.....	19,712.52
Museum Department Salaries.....	20,547.50
Museum Department Appropriations.....	12,434.92
Bills Payable.....	10,000.00
Bills Receivable.....	7,000.00
Earthquake Insurance Sinking Fund.....	1,200.00
Insurance.....	727.87
American Trust Company Stock.....	1,650.00
Wild Life Protection Fund.....	67.64
Sundry Creditors.....	1,668.65
Expense.....	2,608.36
Library.....	7,669.85
Publication.....	7,734.69
	<hr/>
	\$105,634.70

January 1, 1928, Balance due Crocker First National Bank. . . \$ 4,133.96

M. HALL McALLISTER, *Treasurer.*

Examined and found correct,

McLAREN, GOODE & Co., *Certified Public Accountants.*

San Francisco, Calif., February 4, 1928.

May 22, 1928

**INCOME AND OPERATING EXPENSES**

For the fiscal year, January 1, 1927, to December 31, 1927.

*Income:*

Charles Crocker Scientific Fund Endowment	
Income.....	\$ 1,703.88
James Lick Endowment Income.....	68,572.77
General Income.....	18,724.11
Dues.....	3,602.60
Interest from Temporary Investments.....	1,012.90
Profit on Post Card Sales.....	740.64
	<hr/>
Total Income.....	\$ 94,356.90

*Expenditures:*

General Expense.....	\$ 3,627.67
Salaries.....	40,277.23
Interest.....	12,042.37
Insurance.....	925.27
	<hr/>
Total Expenditures.....	56,872.54
	<hr/>
Net Income Transferred to Surplus Account.....	\$ 37,484.36

## SUMMARY OF SURPLUS ACCOUNT

December 31, 1927

Balance January 1, 1927.....	\$498,729.49
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*Additions:*

Net Income for the year ended December 31,	
1927.....	\$ 37,484.36

Sale of duplicate books.....	47.07
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Total Additions to Surplus.....	37,531.43
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	\$536,260.92
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*Deductions:*

Depreciation.....	15,635.00
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Surplus, December 31, 1927.....	\$520,625.92
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## BALANCE SHEET

December 31, 1927

*Assets**Property:*

Real Estate 831-833 Market Street . . . . .	\$600,000.00	
Commercial Building, 833 Market Street . . . .	516,818.66	
Real Estate, Jessie Street . . . . .	8,083.65	
		<hr/>
		\$1,124,902.31

*Museum, Golden Gate Park:*

Building Construction . . . . .	\$192,025.92	
General Collections . . . . .	180,557.48	
Library and Equipment . . . . .	126,670.55	
Tools and Equipment . . . . .	41,455.44	
Office Furniture . . . . .	4,952.54	
		<hr/>
		545,661.93

<i>Investment Securities . . . . .</i>	18,250.00
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*Ignatz Steinhart Trust:*

Bills Receivable . . . . .	\$ 11,000.00	
Steinhart Aquarium Construction . . . . .	263,390.29	
Steinhart Aquarium Equipment . . . . .	27,129.87	
Steinhart Aquarium Revolving Fund . . . . .	5,000.00	
Uninvested cash on hand . . . . .	613.37	
		<hr/>
		307,133.53

*Current Assets:*

Bills Receivable . . . . .	\$ 14,000.00	
Post Cards in Stock . . . . .	1,024.12	
Cash on hand . . . . .	117.61	
Sundry Accounts . . . . .	100.00	
		<hr/>
		15,241.73

Total . . . . .	<hr/>	\$2,011,189.50
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## BALANCE SHEET—Continued

*Liabilities**Endowments:*

James Lick Endowment.....	\$804,902.31	
Charles Crocker Scientific Fund Endowment	20,000.00	
John W. Hendrie Endowment.....	13,600.00	
		<hr/>
		\$ 838,502.31

*Funds Held for Special Purposes:*

John W. Hendrie Endowment Income.....	\$ 960.00	
Alvord Bequest Botanical.....	5,000.00	
W. G. Wright Fund.....	21.54	
Henry M. Holbrook Bequest.....	25.28	
Park Birds Handbook Fund.....	20.00	
Wild Life Protection Fund.....	328.16	
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		6,354.98

<i>Reserve for Depreciation.....</i>	117,686.56
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*Ignatz Steinhart Trust:*

Principal.....	\$250,000.00	
Interest.....	57,133.53	
		<hr/>
		307,133.53

*Notes and Accounts Payable:*

Bills Payable.....	\$215,000.00	
Accounts Payable, Sundry Trade Creditors..	1,138.87	
Due Crocker First National Bank (Overdraft)	4,133.96	
Due Ignatz Steinhart Trust.....	613.37	
		<hr/>

	220,886.20
Surplus.....	520,625.92
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Total.....	\$2,011,189.50
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SUSIE M. PEERS,  
Secretary, Board of Trustees.

We have examined the foregoing Balance Sheet, together with the books and accounts of the California Academy of Sciences, and in our opinion, it is properly drawn up so as to exhibit a true and correct view of the Academy's affairs, as shown by the books.

McLAREN, GOODE & Co.,

*Certified Public Accountants.*

San Francisco, Calif.,  
February 4, 1928.





